



K'gari (Fraser Island) Bushfire Review

Report 1: 2020-21



K'gari (Fraser Island) Bushfire Review

Report 1: 2020-21

Document Details

Security Classification	PUBLIC
Security Classification Review Date	27 May 2021
Author	Office of the Inspector-General Emergency Management
Authority	Inspector-General Emergency Management
Version control	FINAL

Content

© State of Queensland (Inspector-General Emergency Management) 2021

The Queensland Government, acting through the Inspector-General Emergency Management, supports and encourages the dissemination and exchange of publicly funded information and endorses the use of Creative Commons.

All Inspector-General Emergency Management material in this document – except any material protected by a trademark, and unless otherwise noted – is licensed under <https://creativecommons.org/licenses/by/4.0/legalcode>.



The Inspector-General Emergency Management has undertaken reasonable enquiries to identify material owned by third parties and secure permission for its reproduction. Permission may need to be obtained from third parties to re-use their material.

Written requests relating to the copyright in this document should be addressed to:

Intellectual Property Coordinator
C/O QPS Legal Unit, Legal Division
Queensland Police Service
GPO Box 1440, Brisbane 4001
Phone: 07 3364 3958
Email: PSBA.Copyright@PSBA.qld.gov.au

Disclaimer

To the extent possible under applicable law, the material in this document is supplied as-is and as-available, and makes no representations or warranties of any kind whether express, implied, statutory, or otherwise. This includes, without limitation, warranties of title, merchantability, fitness for a particular purpose, non-infringement, absence of latent or other defects, accuracy, or the presence or absence of errors, whether or not known or discoverable. Where disclaimers of warranties are not allowed in full or in part, this disclaimer may not apply.

To the extent possible under applicable law, neither the Queensland Government or the Inspector-General Emergency Management will be liable to you on any legal ground (including, without limitation, negligence) or otherwise for any direct, special, indirect, incidental, consequential, punitive, exemplary, or other losses, costs, expenses, or damages arising out of the use of the material in this document. Where a limitation of liability is not allowed in full or in part, this limitation may not apply.

PUBLIC

Content disclaimer

The Office of the Inspector-General Emergency Management has reviewed all relevant documentation and evidence provided by state agencies and other entities, the community, and sourced from media and other public reports. This review report is based on the information that has been supplied to the Office of the Inspector-General Emergency Management as at 19 March 2021 and does not consider any other material that has not been provided or sighted by the Office of the Inspector-General Emergency Management. It is therefore possible that some inconsistencies may be present despite the best efforts of the Office of the Inspector-General Emergency Management to validate and align the raw data utilised throughout this report.

Contact for enquiries

All inquiries regarding this review report should be directed to the Office of the Inspector-General Emergency Management. Email: info@igem.qld.gov.au Tel: 07 3029 8813

Front cover image:

Image supplied by IGEM

Back cover image:

Image supplied by IGEM

Office of the Inspector-General Emergency Management

Phone: (07) 3029 8813

Email: Info@igem.qld.gov.au

Web: www.igem.qld.gov.au

Postal Address: GPO Box 1425, Mail Cluster 15.7
Brisbane Queensland 4001



31 March 2021

**Inspector-General
Emergency Management**

The Honourable Mark Ryan
Minister for Police and Corrective Services and
Minister for Fire and Emergency Services
PO Box 15195
CITY EAST QLD 4002

Dear Minister

In accordance with your instruction of 4 December 2020, I present a report into the effectiveness of preparedness activities and the response to the bushfire on K'gari (Fraser Island) that occurred in October to December 2020.

As requested, in conducting this review, my Office worked closely with stakeholders and the Queensland community, considered previous IGEM Queensland Bushfire Reviews and relevant matters from the 2020 Royal Commission into National Natural Disaster Arrangements. The review has also had regard for the cultural and environmental significance of K'gari and its UNESCO World Heritage listing.

The approach to the review has been collaborative, with extensive engagement undertaken with entities responsible for the management of K'gari, and bushfire and disaster management in Queensland. This has included Queensland Fire and Emergency Services, the Department of Environment and Science, including the Queensland Parks and Wildlife Service, the Queensland Police Service, local government and other relevant stakeholders. Engagement also occurred with the Butchulla people as the Traditional Owners and native title holders of K'gari, along with taking public submissions and holding a number of community and business forums.

The recommendations in this report build on good practice and identify ongoing opportunities for improvement in Queensland's arrangements to prepare and respond to major bushfires.

Yours sincerely

Alistair Dawson APM

Inspector-General Emergency Management

Acknowledgement

The Office of the Inspector-General Emergency Management acknowledges the Butchulla people as the Traditional Owners and Custodians of K'gari. We recognise their connection to the land, sea and community. We pay our respects to their Elders, past, present and emerging.

The Butchulla (Badtjala) Creation Story¹

Beiral, the great God in the sky, made all the people. But after he made the people, Beiral realised that the people had no lands! So Beiral sent a messenger, Yendingie, to solve the problem and create lands for the people. Yendingie came down from the sky, and set to the work to make the sea, and then the land. When Yendingie arrived at what is now known as Hervey Bay, he had a helper – the beautiful white spirit called Princess K'gari.

K'gari was a greater helper, and helped Yendingie make the seashores, the mountain ranges, the lakes and the rivers. Princess K'gari enjoyed her work very much and worked tirelessly to create all this natural beauty. One day Yendingie was concerned, and said to her "K'gari, you better rest, otherwise you will be too tired to continue our work. There are some rocks over there in the sea. Why don't you go and lie down and have a sleep?"

So Princess K'gari lay down on the rocks and had a long and deep sleep. When she awoke, she said to Yendingie, "I think this is the most beautiful place we have ever created. Please, Yendingie, may I stay here forever?" "Oh no, K'gari, I cannot allow that. You are a spirit, and you belong here with me!" But K'gari pleaded with him "Please, please Yendingie...I could still look up into the sky and see what you are doing. I would love to stay here."

Finally, Yendingie agreed. "You may stay here, but you cannot stay in spirit form. I will need to change you." So he changed her into a beautiful island. So she wouldn't be lonely, he then made some beautiful trees and flowers, and some lakes that were specially mirrored so that she could see in to the sky. He made creeks and laughing waters that would become her voice, and birds and animals and people to keep her company. He gave these people knowledge and laws, and told them what to do, and how to procreate, so that their children and ancestors would always be there to keep K'gari company.

And she is still here today, looking up and the sky in one of the truly most beautiful places on earth! She is very happy in and as a, "paradise".

Three Butchulla (Badtjala) lores:

1. What is good for the land comes first.
2. Do not touch or take anything that does not belong to you.
3. If you have plenty you must share.²

Contents

Acknowledgement.....	5
Contents	6
Figures.....	8
Executive summary.....	9
Recommendations	11
Introduction	16
Background	16
Purpose	16
Scope	16
Methodology.....	17
Data collection and analysis.....	17
First Nations insights	18
Community, tourism and business insights	18
Researcher insights.....	18
Context	19
About K'gari.....	19
Burnt area map of K'gari	20
Event synopsis	21
Policy and legislation.....	23
Disaster Management	23
Fire and Emergency Services	24
Native Title	25
Cultural Heritage	25
World Heritage	25
Environment	27
Recreation.....	27
Queensland Bushfire Governance	28
State Inter-departmental Committee Bushfire	30
Regional Inter-departmental Committee Bushfire.....	30
Area Fire Management Groups	30
Disaster Management Groups.....	31
Consultation Insights.....	32
First Nations	32
Community	33
Tourism and Business.....	35
Research	36
Preparedness	37

Understanding risk	37
Queensland Emergency Risk Management Framework	37
Area Fire Management Group risk management	37
Hazard mitigation	41
Prescribed or planned burn programs	42
First Nations' fire management practices	44
Track and fireline maintenance	46
K'gari Community Preparedness	47
Interagency arrangements	49
Cost sharing	49
Fire suppression	50
Capability development.....	51
Training and exercising	51
Remote Area Fire Fighting Teams	52
Response.....	54
Activation of disaster management arrangements	54
Traditional Owner liaison.....	55
Queensland Parks and Wildlife disaster management	55
Situational reporting	57
Incident level	58
Evacuation planning	60
Intelligence and predictive services	61
Backburning operations	63
Aerial Operations	64
Innovative technology	65
Transition of control.....	66
Community engagement	68
Public engagement	68
Public engagement during preparedness	68
Community associations.....	68
Public engagement in bushfire risk mitigation planning	68
K'gari Bushfire Community Meetings	69
Restricting access to K'gari	69
Visitor management	70
Fire compliance and signage.....	71
Communications systems	72
Warnings	73
Australian Warning System	73
Media Unit operations	73
Lessons management.....	75
Appendix A: Review terms of reference	77

Appendix B: Media release	79
References	81

Figures

Figure 1: Burnt Area Map of K'gari as at 23 March 2021 (Source: Public Safety Business Agency GIS Unit)	20
Figure 2: Queensland's Bushfire Management Arrangements (Source: QFES, Queensland Bushfire Plan)	29
Figure 3: Bushfire Prone Area Map (Source: Fraser Coast AFMG, Bushfire Risk Mitigation Plan)	39
Figure 4: K'gari (Fraser Island) burnt area (5 year rolling average) - Institute of Foresters of Australia	43
Figure 5: Results of a successful backburn (Source: Traditional burning practitioner)	45
Figure 6: Department of Education block, Happy Valley (Source: Happy Valley Rural Fire Brigade) ..	49
Figure 7: Hazard specific arrangements and the QDMA (Source: QFES, Queensland Disaster Management Arrangements Participant Guide)	54
Figure 8: Disaster Management Framework (Source: QPWS Coastal and Islands Region Disaster Management Operational Plan)	56
Figure 9: Queensland Bushfire Plan incident levels (Source: QFES, Queensland Bushfire Plan)	59

Executive summary

The K'gari (Fraser Island) Bushfire Review was announced by the Premier and Minister for Trade on 2 December 2020. The Office of the Inspector-General Emergency Management (IGEM) was officially tasked by the Minister for Police and Corrective Services and Minister for Fire and Emergency Services (the Minister) to undertake the review on 4 December 2020.

The review focused on preparedness and response to the K'gari bushfire event. Bushfire hazard mitigation activities are considered in scope for the review, given the significant impact these activities have on preparedness. IGEM was asked to consider the environmental and cultural aspects of the World Heritage listed site, which is an extremely unique island based on its pristine lakes, ancient rainforests and rare sand dune systems.

K'gari is the world's largest sand island, listed as a World Heritage Area in 1992 to recognise its internationally significant features. It is the traditional land of the Butchulla people, who are the Traditional Owners and native title holders above the high-water mark on K'gari.³

In October 2020, the Bureau of Meteorology reported above average mean maximum and minimum temperatures in the east of the state.⁴ On 14 October 2020, a vegetation fire was reported following an illegal campfire near Orange Creek, at the north-east of K'gari. Several factors contributed to the fire spreading, including high temperatures, strong dry northerly winds, complex vegetation structures and types, difficult terrain and remote and limited access constrained by dry, loose sand tracks.

During the two-month response, the bushfire travelled from the north of the island southwards towards Kingfisher Bay. In this time it posed a threat to townships including Orchid Beach, Happy Valley, Yidney Rocks and The Oaks, in addition to the Queensland Parks and Wildlife Service (QPWS) base at Dundubara, significant cultural sites for the Butchulla people, and tourist facilities including the campgrounds at Cathedrals, and the iconic Kingfisher Bay Resort and Village.

Despite the efforts of QPWS and Queensland Fire and Emergency Services (QFES) response personnel, the fire burnt through approximately 85,000 hectares or more than half the island. Response agencies have advised the K'gari bushfire event resulted in no loss of life and no homes lost. This is despite unique challenges including widespread mobile phone and internet blackspots, dry and fire receptive vegetation, inaccessible terrain, and narrow sand tracks.

IGEM acknowledges the commitment and fortitude of fire management and response agencies, rural fire brigades, the Butchulla people and community associations on the island in responding to this highly complex and challenging bushfire event that tested response agencies. The first use of waterbombing aircraft was on 9 November, three weeks into the fire. QFES advised a total of 30 aircraft were later used for the event, dropping over 13.3 million litres of freshwater, saltwater and gel additives. The review found opportunities for QFES and QPWS to review their interagency protocols with the Butchulla people to enhance the timely deployment of resources in future events.

As part of the review, IGEM undertook community engagement with the Butchulla people, and 147 community members across five forums hosted at Orchid Beach, Happy Valley, Kingfisher Bay, Urangan and Rainbow Beach. IGEM considered 78 written public submissions. Overwhelmingly, the community said they want to see state agencies work closer together to plan and prepare for bushfires in the World Heritage listed area. Traditional Owners, the

PUBLIC

community, business and tourism operators on the island sought a better opportunity to engage about the priorities for bushfire mitigation activities and response on the island. Enhancing communication with the community about decisions that may impact them was also a high priority for those affected by this event.

The review found opportunities for QFES and QPWS to better engage with relevant stakeholders, the Butchulla people and the community, to plan and undertake hazard mitigation activities. This was particularly relevant across multiple land tenures with different landowners which could benefit from further engagement as part of a reinvigorated Locality Specific Area Fire Management Group on K'gari. The review also acknowledged the changing profile of the island since it was operated by the Department of Forestry for logging operations. Since 1992, the island has been listed as a World Heritage site and is managed on a day to day basis by QPWS. The agency is responsible for the management of 98% of the island including the K'gari section of Great Sandy National Park (163,721 hectares) and Fraser Island State Forest (34 hectares). Other tenures on K'gari include freehold (372 hectares); leasehold (47 hectares); reserve (70 hectares); and state land (903 hectares).

The review makes a number of recommendations to address opportunities for improvement related to enhancing the management and protection of world heritage and cultural values. The review found opportunities to strengthen collaboration with the Butchulla people, the community and business representatives through the Locality Specific Area Fire Management Group for K'gari. It also found an opportunity to make bushfire risk and planning information more readily available to the community.

IGEM has recommended further consideration of innovative solutions such as, but not limited to, the use of Remote Piloted Aircraft, expanding the use of Automatic Number Plate Recognition technology and examining mobile phone check-in applications to support visitor management and greater compliance. IGEM also acknowledged good practice examples which include: the establishment of community consultative committees at each township on the island by Fraser Coast Regional Council; community planning undertaken by the Happy Valley Rural Fire Brigade and community associations at Orchid Beach and Happy Valley; and embedding representatives of the Butchulla people in the Incident Management Team and Incident Coordination Centre during the bushfire response. The Enhanced Fire Management Project currently being implemented by QPWS is another example of good practice highlighted in the report.

Recommendations

Recommendation 1

The Inspector-General Emergency Management recommends a set of guiding principles that reflect a unified response to World Heritage listed sites in Queensland be included in the *Queensland State Disaster Management Plan* and reflected in the *Queensland Bushfire Plan*.

Recommendation 2

The Inspector-General Emergency Management recommends that the Queensland Government works with the Commonwealth Government to review the *Project Agreement for World Heritage Management* to ensure Queensland and Australia continue to meet their obligations under the World Heritage Convention to protect, conserve and present our World Heritage properties.

Recommendation 3

The Inspector-General Emergency Management recommends the *Queensland State Disaster Management Plan* and the *Queensland Bushfire Plan* be reviewed to enhance appropriate arrangements for the management of bushfire and disaster events where a threat is posed to significant environmental and cultural heritage sites.

Recommendation 4

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services regularly review and evaluate the effectiveness of the *Queensland Bushfire Plan* with land managers and stakeholders, including disaster management groups. A review should occur in line with any material change to the *Queensland State Disaster Management Plan*, the *Disaster Management Act 2003*, the *Prevention Preparedness Response and Recovery Guideline*, or after major bushfire events, to ensure appropriate alignment and currency.

Recommendation 5

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services facilitate an annual state level exercise of the *Queensland Bushfire Plan* that includes all relevant stakeholders and land managers. The exercise should focus on roles, responsibilities, interagency arrangements and handover arrangements between agencies and land managers.

Recommendation 6

The Inspector-General Emergency Management recommends the Locality Specific Fire Management Group for K'gari meet at least twice per year, in person or virtually.

Recommendation 7

The Inspector-General Emergency Management recommends all Area Fire Management Groups in Queensland make their Bushfire Risk Mitigation Plans, bushfire risk mapping and methodology easily understood and available to the community. All public plans should be dated to ensure currency and incorporate mechanisms for community feedback.

Recommendation 8

The Inspector-General Emergency Management recommends the prescribed burn program for K'gari be developed by the Department of Environment and Science, in collaboration with the Locality Specific Fire Management Group and the Butchulla people, based on the principles of the *National Position on Prescribed Burning*. This program should incorporate a process for monitoring and evaluation of outcomes and integration of evolving fire management practices.

Recommendation 9

The Inspector-General Emergency Management recommends a collaborative review of firelines, tracks and trails on K'gari be undertaken by the Department of Environment and Science, in collaboration with the Locality Specific Area Fire Management Group and the Butchulla people, to ensure an adequate network is agreed by relevant stakeholders, and roles and responsibilities for maintenance are agreed and documented.

Recommendation 10

The Inspector-General Emergency Management recommends the *Interagency Protocol for Fire Management* be reviewed by all relevant entities, including representatives of the Butchulla people, and be updated as a matter of priority. Entities responsible for the protocol should implement a process for regular review and evaluation of its effectiveness. This review process should be conducted after a major bushfire event, or to reflect any material change to applicable legislation and policy. It should also consider pre-arranged approvals and a range of agreed fiscal protocols between the agencies.

Recommendation 11

The Inspector-General Emergency Management recommends the Department of Environment and Science establish pre-determined financial delegations and authority for Queensland Parks and Wildlife Service Incident Controllers.

Recommendation 12

The Inspector-General Emergency Management recommends the Department of Environment and Science review its training framework and minimum mandatory training requirements for Queensland Parks and Wildlife Service Incident Controllers to ensure they are appropriately trained to manage significant events.

Recommendation 13

The Inspector-General Emergency Management recommends the Department of Environment and Science identify opportunities to increase Queensland Parks and Wildlife Service's capability in incident management and multi-agency fire response, through exercising plans and procedures in collaboration with other stakeholders, including disaster and fire management groups at all levels.

Recommendation 14

The Inspector-General Emergency Management recommends the Department of Environment and Science review the format and delivery of Queensland Parks and Wildlife Service annual fire refresher training to include a scenario-based exercise.

Recommendation 15

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services consider expanding specialist Remote Area Firefighting Team capability to assist in responding to significant bushfire events which occur in rugged or inaccessible terrain.

Recommendation 16

The Inspector-General Emergency Management recommends the next review of the *Queensland State Disaster Management Plan* examines and provides guidance in respect to the application of Queensland's disaster management arrangements to support hazard specific events such as bushfire.

Recommendation 17

The Inspector-General Emergency Management recommends entities with responsibilities for land and fire management consider the establishment of roles for Traditional Owner and First Nations representatives in incident management structures for significant bushfire or disaster events including those that may impact on cultural heritage in Queensland's World Heritage sites.

Recommendation 18

The Inspector-General Emergency Management recommends the Department of Environment and Science ensure that all Queensland Parks and Wildlife Service regions develop a Disaster Management Operations Plan based on a standardised format. The plans should include provision for annual review to ensure they remain contemporary, interoperable with relevant disaster management plans and aligned to the *Department of Environment and Science Emergency Management Plan*.

Recommendation 19

The Inspector-General Emergency Management recommends the Department of Environment and Science develop and implement a Wildfire Response Plan for Queensland Parks and Wildlife Service Coastal and Islands Region, to be included in the region's *Disaster Management Operations Plan*.

Recommendation 20

The Inspector-General Emergency Management recommends the arrangements and requirements for situational reporting when an incident is under the control of the Department of Environment and Science be detailed in the *Queensland Bushfire Plan*. These arrangements should also be outlined in relevant joint entity agreements and operational doctrine.

Recommendation 21

The Inspector-General Emergency Management recommends the Department of Environment and Science review the resourcing model to ensure surge capacity is available to support incident management functions during response operations. This includes processes to request assistance from other departments and entities with responsibilities for fire and incident management.

Recommendation 22

The Inspector-General Emergency Management recommends the Department of Environment and Science review its suite of operational doctrine to ensure arrangements for situational reporting and requests for assistance are aligned to recognised multi-agency practices used in disaster management.

Recommendation 23

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services and the Department of Environment and Science review the current description of Level 1, 2, and 3 bushfire incidents and the implied meaning of property in the *Queensland Bushfire Plan*. This review should identify and agree on clear criteria and decision points for the transfer of control and develop a standard process and templates.

Recommendation 24

The Inspector-General Emergency Management recommends the Maryborough District Disaster Management Group works with the Fraser Coast Local Disaster Management Group to plan for the evacuation of K'gari due to bushfire. Once developed, the plan should be exercised and regularly reviewed.

Recommendation 25

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services examines the use of predictive service capability to inform prevention and preparedness in addition to response activities.

Recommendation 26

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services engages with land managers and other stakeholders on K'gari to source data to inform Predictive Services products.

Recommendation 27

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services identifies stakeholders that would benefit from predictive service products. Suitable advice and training should be provided to these stakeholders to assist with using and interpreting the products.

Recommendation 28

The Inspector-General Emergency Management recommends a public information resource be developed by Queensland Fire and Emergency Services to inform the community and stakeholders about aerial assets utilised in bushfire response.

Recommendation 29

The Inspector-General Emergency Management recommends the membership of the K'gari Locality Specific Fire Management Group be expanded to include representatives of the Butchulla people, community associations from each township and tourism and business operators with interests on the island.

Recommendation 30

The Inspector-General Emergency Management recommends the Bushfire Risk Mitigation Plan for Fraser Coast Area Fire Management Group include a schedule of planned engagement activities, or a community engagement sub-plan outlining these activities, and be publicly available.

Recommendation 31

The Inspector-General Emergency Management recommends the Maryborough District Disaster Management Group works with the Fraser Coast Local Disaster Management Group to prepare and exercise a communications sub-plan with all responsible agencies, to clarify the roles, responsibilities and communication channels used for restricting access to K'gari.

Recommendation 32

The Inspector-General Emergency Management recommends the Department of Environment and Science examines the utilisation of technology, in consultation with relevant stakeholders, to improve the collection of visitor numbers and movement data. This could include, for example, expanding the use of Automatic Number Plate Recognition technology to K'gari and examining the suitability of mobile phone check-in applications.

Recommendation 33

The Inspector-General Emergency Management recommends the Department of Environment and Science implements the proposed treatments for fire identified in the Queensland Parks and Wildlife Service *K'gari Compliance Strategy*.

Recommendation 34

The Inspector-General Emergency Management recommends the Department of Environment and Science undertake a review of campfire locations on K'gari, including all relevant signage on and off the island, maps and visitor permit information, to promote a consistent message about lighting campfires on K'gari.

Recommendation 35

The Inspector-General Emergency Management recommends Department of Environment and Science implement an awareness and engagement strategy aimed at deterring the lighting of campfires to encourage behavioural change amongst visitors.

Recommendation 36

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services and the Department of Environment and Science monitor the progress of relevant improvement activities resulting from the *K'gari (Fraser Island) Bushfire Review*, through their respective lessons management programs.

Recommendation 37

The Inspector-General Emergency Management recommends should a Queensland Government Action Plan be considered, clarity about the intent of the recommendations be sought from the Inspector-General Emergency Management to assist in informing this process.

Recommendation 38

The Inspector-General Emergency Management recommends this report be returned to the IGEM to monitor, evaluate and report on progress and implementation of the recommendations that are accepted in whole or in part by government.

Introduction

Background

In the early afternoon of 14 October 2020, campers reported a fire at a campground near Orange Creek on the north-east coast of K'gari (Fraser Island). Triple Zero Fire Communications contacted the Orchid Beach Rural Fire Brigade (RFB), who reported the fire to the Queensland Parks and Wildlife Service (QPWS). Park rangers and Orchid Beach RFB attended. QPWS assumed the role of Incident Controller and deemed that a direct attack on the fire was not feasible due to dry conditions, vegetation, strong winds and inaccessible terrain. The source of the fire was determined to be an illegally lit campfire that was not properly extinguished.

Due to continued unstable conditions and the remote and mostly inaccessible terrain, the fire continued to burn through to 16 December 2020. High temperatures, strong dry winds, complex vegetation structures and types, difficult terrain and remote and limited access, constrained by dry, loose sand tracks, promoted the fire's spread and made containment difficult.

The Queensland Police Service (QPS) concluded an investigation into the illegally lit fire on 12 December 2020. Four males appeared in Hervey Bay Magistrates Court and were convicted and fined in January 2021.

The fire garnered high levels of media and public interest, locally, nationally and internationally, due to its World Heritage status and its internationally recognised unique flora, fauna and ecosystems. It affected areas of cultural and environmental significance for the Butchulla people, local townships came under threat and there were significant economic impacts on local tourism and business owners.

Purpose

The purpose of this review is to assess the effectiveness of preparedness activities and the response to the K'gari bushfire event by entities responsible for the management of the island, and bushfire and disaster management in Queensland.

Scope

Terms of Reference (ToR) for the K'gari (Fraser Island) Bushfire Review (Appendix A) and the legislated functions of the Office of the Inspector-General Emergency Management (IGEM) under Section 16 of the *Disaster Management Act 2003* (DM Act) frame the scope of this review.

The ToR are focused on preparedness and response and required IGEM to engage with a broad range of stakeholders including those responsible for the management of K'gari, agencies responsible for bushfire and disaster management, the Butchulla people and the wider community, including communities located on K'gari.

Preparedness is defined under the *Queensland State Disaster Management Plan* (QDSMP) as 'the taking of preparatory measures to ensure that, if a disaster event occurs, communities, resources and services are able to cope with the effects of that event.'⁵ It defines disaster response as 'taking appropriate measures to respond to an event, which includes actions taken and measures planned before, during and after an event.'⁶

PUBLIC

The review has also considered the cultural and environmental significance of K'gari and its United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage listing. Recommendations and insights from IGEM's 2018 and 2019 *Queensland Bushfires Reviews*, and resulting activities and outcomes, have also been incorporated where relevant. The recommendations made by the 2020 Royal Commission into National Natural Disaster Arrangements have also informed the review.

The review has been mapped against the relevant Shared Responsibilities of the refreshed *Standard for Disaster Management in Queensland* (the DM Standard), and informed by the original standard released in 2014⁷ as follows:

- a shared understanding of bushfire risk, including by the community (Managing Risk)
- bushfire mitigation planning and implementation by responsible agencies (Managing Risk)
- a shared understanding about disaster management and bushfire management and response policies, plans and coordination arrangements, including for evacuations (Planning and Plans)
- community engagement, information and education (Community Engagement)
- public communication and warnings, including resulting actions taken by the community (Community Engagement)
- training, exercising and resource planning (Capability Integration)
- information sharing and intelligence (Capability Integration)
- response operations, including command, control and coordination (Operations)
- proactive collaboration and coordination between responsible entities (Collaboration and Coordination).

Out of scope

The scope of this review has not included:

- recovery operations, including economic recovery
- the sea country surrounding K'gari
- the effects of smoke and particulate matter
- internal operations of specific agencies not specifically related to the ToR.

Methodology

Data collection and analysis

IGEM used the following data collection methods:

- invited submissions from the public, all Queensland Government departments, key agencies and interests across the disaster management, relevant disaster management groups, environmental, land management and other relevant sectors
- engaged with the Butchulla people as the Native Title holders, Traditional Owners and custodians of K'gari
- conducted community, tourism and business forums on K'gari and on the adjacent mainland
- convened a virtual forum of researchers with expertise in K'gari

PUBLIC

- held qualitative, face to face interviews and discussions with groups and key individuals from responsible agencies, community and business groups, disaster management groups and interest groups
- collected wide ranging documentation, operational information, records and reporting from responsible agencies and land managers.

IGEM's inclusive approach helped capture a great deal of information about K'gari's uniqueness and how fire and disaster management systems operate within that context. The effectiveness of the bushfire and disaster management systems of entities have been assessed against the DM Standard as identified in the review scope. As part of a broader desktop analysis, IGEM considered the observations, insights and recommendations of the *2018 and 2019 Queensland Bushfire Reviews*, and the Royal Commission into National Natural Disaster Arrangements.

IGEM's analysis has also considered the cultural and environmental significance of K'gari as reflected in relevant management plans and its UNESCO World Heritage listing, as well as literature from emergency and disaster events which have impacted national parks and World Heritage sites in Australia and internationally. This analysis complemented a desktop review of relevant agency plans and supporting documentation, policies and processes.

First Nations insights

IGEM engaged with the Butchulla Aboriginal Corporation (BAC) as the Registered Native Title Body Corporate representing the Butchulla people's native title rights and interests above the high-water mark. The BAC facilitated engagement with Traditional Owners and custodians for K'gari through the following approaches:

- meeting with the Chair of the Board and General Manager of the BAC
- on-island discussions and learning tour with Butchulla Land and Sea Rangers, and engagement with the Butchulla environmental protection team
- holding a Butchulla Traditional Owner's forum in Hervey Bay with over 20 participants
- receipt of a written submission from BAC on behalf of the Butchulla people.

Community, tourism and business insights

IGEM collected community views and perspectives regarding the effectiveness of preparedness, the response to the bushfire and considerations for future events through the following approaches:

- receipt and consideration of 78 written public submissions
- conducting community, tourism and business forums in Orchid Beach, Happy Valley, Kingfisher Bay, Urangan and Rainbow Beach with a total of 147 persons attending across the five forums
- community-led tours of Orchid Beach, Happy Valley, Eurong and Kingfisher Bay townships and surrounds
- holding individual discussions with community members
- commissioning social media analytics.

Researcher insights

IGEM hosted a researcher forum and engaged academics with expertise in fields such as: fire ecology; forest, seed, plant, soil and freshwater ecology; climate change adaption; tourism recovery after fire; community engagement; cultural burning and strategic partnerships. A number of these researchers had extensive experience on K'gari.

Context

About K'gari

K'gari (Fraser Island) is located along the Queensland coastline approximately 300 kilometres north of Brisbane. It is the world's largest sand island at 123 kilometres in length.⁸ K'gari boasts a diverse and spectacular environment including rainforests, eucalypt woodlands, mangroves, wallum and peat swamps, sand dunes and coastal heaths.

In 1992, the island was listed as a United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Listed site in recognition of its outstanding natural universal values.⁹ Prior to this time, the island was managed by the Department of Forestry and was home to logging operations from 1863 to 1991, and sandmining from 1949 to 1976. These operations ceased on the island following a significant environmental campaign to stop these activities, culminating in the Fraser Island Environmental Inquiry.¹⁰

The Traditional Owners of K'gari, the Butchulla people, had their native title rights over the island confirmed by determination of the Federal Court of Australia in October 2014.¹¹ In April 2017, the Queensland Government formally changed the name of Fraser Island in recognition of the Butchulla people's traditional name for the island, K'gari, meaning "paradise."¹²

Today, the vast majority of the island is designated as a national park and managed by the Queensland Parks and Wildlife Service (QPWS) under the *Nature Conservation Act 1992* and the *Recreation Areas Management Act 2006* above the highwater mark.¹³ It also includes some residential and commercial freehold and leasehold areas including townships such as Orchid Beach, Eurong, Happy Valley, and Kingfisher Bay. According to the 2016 Census, 182 residents live on K'gari and there are 201 private dwellings. IGEM understands most property owners on the island do not permanently reside on the island, visiting intermittently and using their properties to operate holiday letting and run tourism businesses.¹⁴ K'gari attracts over 300,000 visitors per year. QPWS manages 600km of roads, more than 250km of walking tracks and 28 campsites across the island. QPWS issued 53,000 camping permits in 2018-19 and 42,700 permits in 2019-20.

The ongoing challenge for park management remains the need to balance the important cultural and conservation values of the island with the growing interest from visitors. Access and connectivity to the island also presents unique challenges for day-to-day management and firefighting efforts, with sand roads only accessible by four-wheel drive vehicles, no mains power or town water supply, no connected sewerage, and limited mobile phone and internet connectivity.

Burnt area map of K'gari

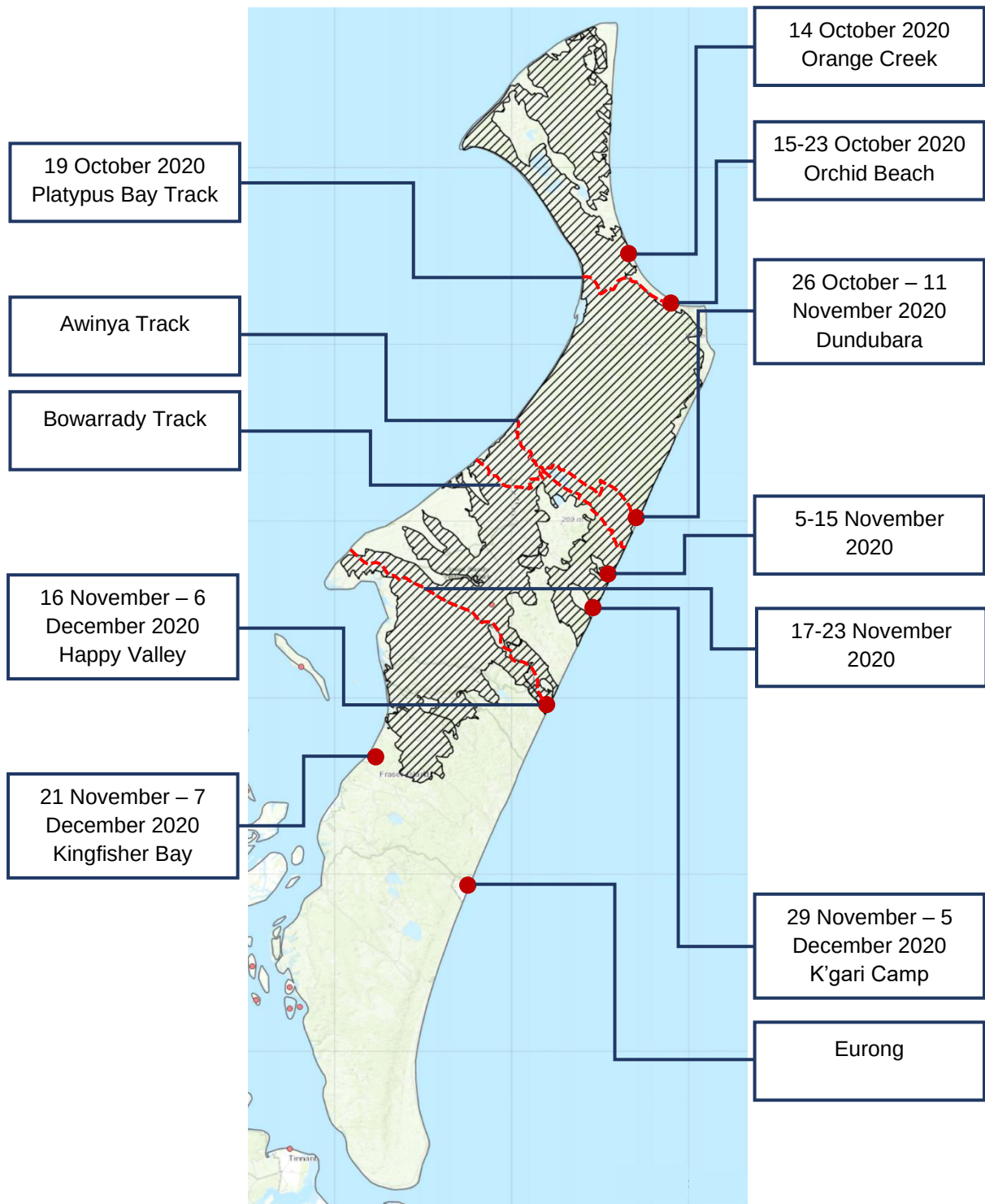


Figure 1: Burnt Area Map of K'gari as at 23 March 2021 (Source: Public Safety Business Agency GIS Unit)

Event synopsis

Vegetation fire reported: 14 October

A vegetation fire was reported on 14 October north of Orange Creek, due to an illegal campfire. The Queensland Parks and Wildlife Service (QPWS) and Orchid Beach Rural Fire Brigade crews attended the incident. QPWS assumed the role of Incident Controller and assessed the fire as a Level 1 Incident. Nearby campers were relocated from the area.

Orchid Beach: 15 – 23 October

Queensland Fire and Emergency Services (QFES) commenced aerial observation and predictive modelling on 15 October. A backburn was undertaken at Playtpus Bay track on 19 October. QPWS established an Incident Management Team (IMT) at their Dundubara base. A QFES liaison officer was embedded in the IMT. A backburn operation was undertaken west of Orchid Beach township on 23 October.

Dundubara & Awinya: 26 October – 11 November

Campers were relocated and camping zones in the Dundubara area were closed. Fire breaks at Awinya and Bowarrady were cleared by QPWS. A spot over of the fire occurred between Milby's dune and Dundubara. A backburn operation was undertaken. Additional QFES resources joined the IMT. QPWS prepared to defend the Dundubara base from the threat of fire.

Cathedral Beach: 5 –15 November

Fire threat increased near Cathedral Beach and firebreaks were prepared around the campgrounds at this location. Further deteriorating fire weather conditions prevented backburning operations taking place. Fire Danger Ratings intensified on 14 November due to northerly winds. Cathedrals on Fraser campgrounds voluntarily closed, and campers were

evacuated. A Public Safety Preservation Act (PSPA) order was invoked at 1225hrs on 14 November for Cathedral Beach and revoked 1330hrs on 15 November.

Waterbombing: 9 – 17 November

The fire intensity increased. QFES commenced waterbombing operations on 9 November. The Large Aerial Tanker (LAT) was deployed by QFES on 11 November. On 17 November, waterbombing gel approvals were provided. The Butchulla Aboriginal Corporation (BAC) also provided approval regarding extraction of water from lakes for waterbombing purposes.

Moon Point Road: 17 – 23 November

Aerial waterbombing and gel was laid by QFES at Moon Point Road using fixed wing aircraft and the LAT. Backburning continued to Old Happy Valley Track and Yidney Scrub to try and contain the fire. The fire jumped south of Moon Point Road and spot overs occurred.

Rainbow Beach: 24 November

The North Coast Regional Operations Centre (ROC) was activated by QFES and the bushfire was also declared a critical incident. The Incident Control Centre (ICC) was established by QPWS at their Rainbow Beach base. A QPWS liaison officer was also embedded at the State Operations Centre (SOC). The LAT contract was extended with planned fatigue leave for air crew in line with requirements. Two main fire areas were to the north of Happy Valley and Kingfisher Bay.

Handover to QFES: 27 November

On 27 November, QPWS and QFES agreed to transition the incident control to QFES. The incident was declared a Level 2 by QFES. BAC was requested to join the QFES-led IMT. Three COWs (Cell on

PUBLIC

Wheels) were strategically placed across the island to improve communications. Access to the island was restricted for residents and essential service workers from 1700hrs. Fraser Coast Local Disaster Management Group (LDMG) moved from Lean Forward to Stand-Up level for recovery planning.

Relocation of ICC: 27 November – 5 December

QFES Incident Controller moved the ICC to the Rainbow Beach Community Centre on 27 November. On 5 December, the ICC was then relocated to QFES Complex in Howard.

K'gari Camp: 29 November – 5 December

Aerial waterbombing and gel drops were undertaken to protect K'gari camp and significant cultural sites on the island.

Happy Valley: 16 November- 6 December

Several community meetings were held between late November and early December regarding potential fire impacts to Happy Valley. Residents commenced preparations of the township on 27 November. An Incident Action Plan for Happy Valley was developed on 5 December.

At 1430hrs on 6 December, a PSPA order for Happy Valley, Yidney Rocks and The Oaks was issued by the Queensland Police Service (QPS). An Emergency Alert message was issued for Happy Valley the

same day as the fire progressed towards the township. Land around the Happy Valley township was impacted by the fire at approximately 1300 hours. QFES advised the township was successfully defended and no loss of life or property occurred. PSPA declaration was revoked by the QPS the same day.

Kingfisher Bay: 21 November – 7 December

Waterbombing was undertaken on 21 November to direct the fire away from Kingfisher Bay Resort. QPWS also undertook work on firelines near the resort. QFES issued a Prepare to Leave - Watch and Act – community bushfire warning on 28 November due to the threat to the resort. Kingfisher Bay Resort voluntarily closes on 30 November. LAT is deployed until 7 December.

On 2 December, the Premier and Minister for Trade directed the IGEM to conduct a review of the incident. The Minister for Police and Corrective Services and Minister for Fire and Emergency Services approved the activation of the Disaster Recovery Funding Arrangements.

Handback to QPWS: 13 - 16 December

The fire was contained by joint agency effort together with Butchulla people and handed back the incident control to QPWS on 13 December. QPWS restored visitor access to the island on 14 December. QPWS determined fire activity was contained on 16 December.

Policy and legislation

Disaster Management

The objectives of the *Disaster Management Act 2003* (the DM Act) are to help communities mitigate the potential adverse effects of an event, prepare for managing the effects of an event, effectively respond to and recover from a disaster or emergency situation, and to provide effective disaster management for the state.¹⁵ The objectives are achieved by establishing disaster management groups, preparing disaster management plans and guidelines, ensuring communities receive appropriate information, and providing for the declaration of a disaster situation.¹⁶

The definition of a disaster is provided at Section 13 of the DM Act. It outlines that a disaster is a *serious disruption* in a community, meaning: loss of human life, illness or injury to humans; widespread or severe property loss or damage; or widespread or severe damage to the environment.¹⁷ Disasters by definition are caused by the impact of an *event*, which are specified at Section 16 of the DM Act and include fire.¹⁸ The definition requires a significant coordinated response by the State and other entities, with the State represented by its departments and their regions state-wide.

Disaster management groups at local and district level have functions that include:

- ensuring the community is aware of ways of mitigating the adverse effects of an event
- preparing for, responding to and recovering from a disaster
- identifying and coordinating the use of resources for disaster operations
- establishing communication systems within the group, between local groups in a disaster district, and between the local and relevant district group, and
- ensuring information about a disaster in the area is promptly given to the state, district or local groups as appropriate.¹⁹

Disaster operations is defined at Section 16 of the DM Act, and involves activities undertaken before, during and after an event happens to help reduce the serious disruption. Disaster operations functions allow actions to occur pre-emptively to decrease the impact of an event on a community and help support recovery.

The Minister for Police and Corrective Services and Minister for Fire and Emergency Services may approve a declaration of a disaster situation by a district disaster coordinator (DDC).²⁰ A disaster declaration can be made if the DDC is satisfied that a disaster has happened, is happening or is likely to happen and the exercise of declared disaster powers is necessary or likely to be necessary. As a result of a disaster situation being declared, a DDC may authorise certain persons with necessary expertise or experience to exercise additional declared disaster powers.²¹ The powers can be exercised to ensure public safety or order, prevent or minimise loss of human life, or illness or injury to humans or animals, or to prevent or minimise property loss or damage, or damage to the environment.²² The powers include, but are not limited to: controlling movements of persons and vehicles; evacuating persons; moving equipment, persons and materials; and conducting mitigation works.

Queensland State Disaster Management Plan

The Queensland State Disaster Management Plan (QSDMP) establishes the framework, arrangements and practices that enable disaster management in Queensland. Its objectives are to outline the principles for disaster management in Queensland, describe the roles and

responsibilities of stakeholders as legislated in the DM Act, and outline the arrangements for prevention, preparedness, response, recovery and resilience. It includes the roles and responsibilities of entities involved in disaster operations²³ and disaster management²⁴ for the state, the coordination of operations and activities performed by these entities, events that are likely to happen, and the priorities for disaster management for the state. There are a number of sub-plans to the QSDMP, including hazard specific plans.

District and local disaster management plans

Disaster management plans at local and district levels must include provision for roles and responsibilities of entities involved in disaster management and disaster operations, the coordination of activities and operations performed by those entities, events that are likely to happen within the relevant area, and disaster management strategies and priorities for the relevant area.²⁵

Fire and Emergency Services

The *Fire and Emergency Services Act 1990* (the FES Act) establishes Queensland Fire and Emergency Services (QFES) and provides for the prevention of and response to fires and other emergency incidents.²⁶ The functions of QFES include, but are not limited to: protecting persons, property and the environment from fire; providing an advisory service to promote fire prevention and control, and safety if a fire happens; and to cooperate with any entity that provides an emergency service.²⁷

Authorised fire officers under the FES Act have powers to take any reasonable measure to protect persons, property or the environment from danger or potential danger caused by a fire.²⁸ Part 7 Division 1 of the FES Act outlines the legislated requirements for the control and prevention of fires, and the powers of the Commissioner, QFES relating to fires.

QPWS is exempt from this Part and Division of the FES Act, which enables QPWS staff to light fires within land for which it has responsibility, except where a local fire ban has been imposed or a State of Fire Emergency is in place²⁹. This exemption allows QPWS to undertake hazard mitigation and response activities under the *Nature Conservation Act 1992* and the *Forestry Act 1959* as required, without QFES approval.

This Part and Division also establishes the responsibilities of land managers to:

- immediately take all reasonable steps to extinguish or control a fire
- report the existence and location of a fire
- comply with a requirement from the Commissioner, QFES to reduce the risk of fire occurring on the premises.^{30 31}

The requirements to take reasonable steps to extinguish and to report apply to QPWS when the lighting of the fire is not authorised by or under the FES Act or any other Act, for example fires that are illegally lit or that start due to dry lightning strike. QPWS also advises that it is normal practice to advise QFES of all planned and unplanned fires on QPWS managed land.

The FES Act also establishes rural fire brigades and provides the legislative framework under which they must operate and be supported by QFES, including functions and powers. Equipment for a rural brigade to carry out its responsibilities is provided by QFES.³²

The arrangements for the management of bushfire in Queensland are outlined in the *Queensland Bushfire Plan* (QBP), as the primary document that provides guidance to

Queensland stakeholders in relation to the management of bushfire. Further information about this plan is available in the Queensland Bushfire Governance section of this report.

Native Title

The *Native Title Act 1993* (Cth) (NT Act) enables the Federal Court to recognise the rights and interests of Aboriginal and Torres Strait Islander people in land and waters according to their traditional laws and customs. In September 2014, the BAC was established to manage the native title rights on behalf of the Butchulla native title holders and Traditional Owners as a prescribed body corporate under the NT Act.³³ The Federal Court recognised the Butchulla people's non-exclusive rights and interests over K'gari on 24 October 2014.

The 2019 Native Title determination covering land and waters of the Great Sandy Straits and to the high-water mark on K'gari. The rights include maintaining places of importance and areas of significance to the native title holders and protecting those places and areas from physical harm. The right to light fires is limited to personal and domestic purposes, and not for the purpose of clearing vegetation.³⁴ The Butchulla Native Title Aboriginal Corporation (BNTAC) also has administrative responsibilities from the high-water mark down.

It is important to note the exercise of the Butchulla people's rights and interests on K'gari is subject to Commonwealth and State laws, as well as traditional laws and customs observed by the native title holders. Butchulla people performing cultural burns, for example, is not included in the native title determination. Approval to do so would be through a formal agreement or a collaborative process authorised as a planned burn.

Cultural Heritage

The *Aboriginal Cultural Heritage Act 2003* (ACH Act) requires for the 'effective recognition, protection and conservation of Aboriginal cultural heritage.'³⁵ The principles of the ACH Act include 'the need to establish timely and efficient processes for the management of activities that may harm Aboriginal cultural heritage.'³⁶ Section 23 of the ACH Act establishes a duty of care to take all reasonable and practicable measures to ensure activities do not harm cultural heritage. However, any person undertaking activities that are necessary due to a bushfire or other natural disaster is taken to comply with the duty of care.³⁷ This is regardless of the type of tenure or land management arrangement, and the cultural heritage does not need to be identified or recorded in a database for it to be protected.³⁸

The Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (DSDSATSIP) has advised that the BAC is the registered cultural heritage body for K'gari above the high-water mark under the ACH Act. The BAC's primary focus under the ACH Act is to identify the Butchulla parties for an area on K'gari and is the first point of contact for cultural heritage matters. Consultation with the Butchulla people may be necessary where there is potential for any activity to harm cultural heritage sites.

World Heritage

Australia has been a member of the UNESCO World Heritage Committee from 2017 through to 2021. Elections are held every two years with representatives chosen from the 193 countries that are party to the World Heritage Convention. Australia has 19 World Heritage sites, with five, including K'gari, in Queensland.

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) regulates actions that may have a significant impact on the values of declared World Heritage properties. The term 'World Heritage values' encompasses all attributes that contribute to the

Outstanding Universal Value of a World Heritage property. The K'gari Statement of Outstanding Universal Value is the official statement about the value of the island as a World Heritage property and includes its protection and management requirements.³⁹

Although QPWS is responsible for the day to day management of K'gari, the Department of Environment and Science (DES) is responsible for coordinating World Heritage matters, including policy, strategic planning and providing intergovernmental and cross-jurisdictional advice.⁴⁰ The World Heritage Unit in DES provides secretariat support and advice to the World Heritage Advisory Committees for K'gari. The Unit is supported by a *Project Agreement for World Heritage Management* to ensure Queensland and Australia continue to meet its obligations under the World Heritage Convention to protect, conserve and present out World Heritage properties. This agreement has not materially changed in a decade and is due for renewal in 2022-23 which may present opportunities to consider the ongoing needs of K'gari as one of Queensland's World Heritage listed sites.

World Heritage Advisory Committees provide advice to the Australian and Queensland Governments on matters relating to the protection, conservation, presentation and management of the K'gari World Heritage area. They are made up of representatives of the K'gari community including the Butchulla people, tourism, local council and conservation groups and the scientific community.⁴¹ The committees issue communiques to both levels of government, which are also provided to QPWS senior officials to inform management and planning.

In 2018, a governance review was initiated for all World Heritage Advisory committees in Queensland. The review recommended a single committee be established with an independent chair and consisting of representatives of K'gari communities, the scientific community and the Butchulla people. As at October 2019, the two World Heritage Advisory Committees (Scientific Advisory and Community Advisory) for K'gari had expired. DES has commenced a process to appoint the new single Fraser Island (K'Gari) World Heritage Advisory Committee.

QPWS has advised a World Heritage Strategic Plan for K'gari is currently under development. It is intended to reflect how all obligations are to be implemented in partnership with stakeholders, including the new World Heritage Advisory Committee, Fraser Coast Regional Council, the BAC, the tourism sector and research institutions.

K'gari is a unique environment with significant values relative to Australia, the State of Queensland, First Nations people, and the communities and businesses it supports. 'World Heritage sites are places that are important to and belong to everyone, irrespective of where they are located. They have universal value that transcends the value they hold for a particular nation.'⁴² Every effort should be made to protect and preserve it in line with its unique environmental and cultural status. The management of K'gari as a World Heritage site should be considered in this way.

Recommendation 1

The Inspector-General Emergency Management recommends a set of guiding principles that reflect a unified response to World Heritage listed sites in Queensland be included in the *Queensland State Disaster Management Plan* and reflected in the *Queensland Bushfire Plan*.

Recommendation 2

The Inspector-General Emergency Management recommends that the Queensland Government works with the Commonwealth Government to review the *Project Agreement for World Heritage Management* to ensure Queensland and Australia continue to meet their obligations under the World Heritage Convention to protect, conserve and present our World Heritage properties.

Environment

QPWS is responsible for managing and conserving protected areas such as K'gari under the *Nature Conservation Act 1992* (the NC Act). The objective of the NC Act is to conserve nature while allowing for the involvement of Indigenous people in the management of protected areas in which they have an interest.⁴³ The K'gari section of the Great Sandy National Park (163,721 hectares) and the Fraser Island State Forest (34 hectares) constitute 98% of the island.

The NC Act requires QPWS to have a management plan in place for K'gari. QPWS has advised this is currently being reviewed to align with the QPWS Values-based Management Framework.⁴⁴ Since 2017 this framework has guided how QPWS manages protected areas and state forests. The framework prioritises management of key values on a park and the obligations of DES as a land manager. QPWS advised that its management of key values are monitored, evaluated and reported on under the framework, to show that QPWS is using public resources efficiently and activities which protect values are being prioritised.⁴⁵

As previously identified, the FES Act identifies the functions of QFES to protect the environment from fire and hazardous materials. The DM Act also includes recognition of damage to the environment. Both the QSDMP and QBP could provide more clarity and information in this regard. IGEM recognises the consideration given to the environment in identifying and protecting water sources and the use of bushfire firefighting agents during the K'gari event. There is opportunity to identify suitable considerations and triggers relating to widespread or severe damage to the environment and activation of the disaster management arrangements. This could include clarifying situations or circumstances that constitute widespread or severe damage to the environment, using a place-based approach.

Recommendation 3

The Inspector-General Emergency Management recommends the *Queensland State Disaster Management Plan* and the *Queensland Bushfire Plan* be reviewed to enhance appropriate arrangements for the management of bushfire and disaster events where a threat is posed to significant environmental and cultural heritage sites.

Recreation

K'gari and its beaches form the 170,000-hectare Fraser Island Recreation Area declared under the *Recreation Areas Management Act 2006* (RAM Act). The Fraser Island Recreation Area is managed by QPWS. The RAM Act provides for the establishment, maintenance and use of recreational areas, while also ensuring conservation, cultural, educational, production and recreational values, and the interests of landowners, are considered.⁴⁶

QPWS management is intended to be done in partnership with First Nations peoples to co-steward and incorporate knowledge in land and sea management.⁴⁷ In addition to their management responsibilities under the NC Act, QPWS also facilitates sustainable recreational

opportunities, nature-based tourism and ecotourism,⁴⁸ and heritage experiences including building and maintaining visitor and tourism infrastructure.⁴⁹

Queensland Bushfire Governance

Queensland's bushfire arrangements are governed by the FES Act, the QSDMP and the QBP. These plans outline the various committees at the state, regional, and local level to help coordinate the bushfire planning and mitigation efforts of land managers and response agencies across the state. These arrangements interact with the disaster management arrangements through state, district and local disaster management groups (LDMGs). Individual agencies also have their own processes for prioritising and undertaking bushfire hazard mitigation activities, such as the Fire Referral Groups within QPWS.

The QBP outlines the arrangements that enable Queensland's management of bushfire hazards through prevention, preparedness, response and recovery.⁵⁰ Under the plan, QFES is the primary agency for bushfire management in Queensland and is responsible for the development, implementation and review of the plan. The QBP was released on 1 August 2020, the same day as the official start of Queensland's bushfire season, leaving limited ability for stakeholders to embed the plan for the most recent season.

There is no current review process outlined in the QBP for a regular review of the document. An annual review and evaluation of the document after each bushfire season would assist in embedding the experience and knowledge gained each season. Land managers, disaster management groups and bushfire stakeholders would also benefit from an annual exercise of the plan facilitated by QFES. This would ensure greater clarity around roles, responsibilities and interagency arrangements, trigger points and handover arrangements.

QPWS advised that it utilises a Fire Management Framework that includes the QPWS *Fire Strategy*, *Bioregional Planned Burn Guidelines* and supporting policy and procedures that sets standards for the preparation and operational aspects of planned burns and wildfire response on its parks and forests. Collectively, these documents drive planning, implementation, evaluation, monitoring, collaboration and reporting of fire management activities on QPWS managed lands.

Recommendation 4

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services regularly review and evaluate the effectiveness of the *Queensland Bushfire Plan* with land managers and stakeholders, including disaster management groups. A review should occur in line with any material change to the *Queensland State Disaster Management Plan*, the *Disaster Management Act*, or the *Prevention Preparedness Response and Recovery Guideline*, or after major bushfire events, to ensure appropriate alignment and currency.

Recommendation 5

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services facilitate an annual state level exercise of the *Queensland Bushfire Plan* that includes all relevant stakeholders and land managers. The exercise should focus on roles, responsibilities, interagency arrangements and handover arrangements between agencies and land managers.

PUBLIC

Figure 2 below, sourced from the QBP, outlines Queensland's bushfire management arrangements.⁵¹ The diagram shows a strong level of integration between bushfire risk management and disaster management arrangements across the state. It is worth noting that this level of integration between fire management agencies and disaster management groups was not readily apparent in the preparedness activities and response to the K'gari bushfire event. IGEM found at times limited situational reporting or information flow from fire management agencies to local and district disaster management groups, particularly during the initial stage of the bushfire response.

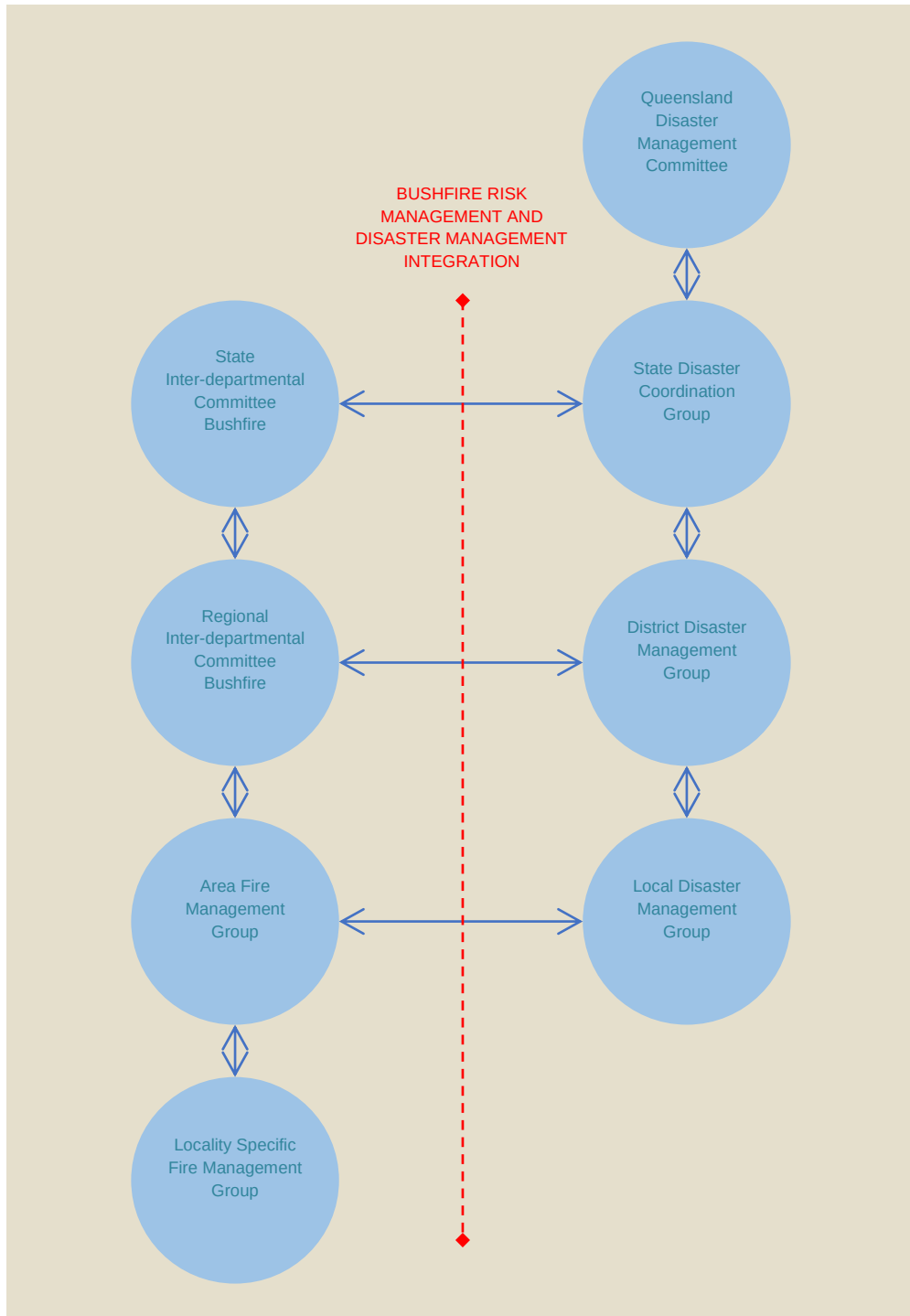


Figure 2: Queensland's Bushfire Management Arrangements (Source: QFES, Queensland Bushfire Plan)

State Inter-departmental Committee Bushfire

Queensland's State Inter-departmental Committee Bushfire (SICB) is established under the QBP to provide strategic leadership in bushfire management, encourage continuous improvement, provide strategic context for bushfire planning and evaluate residual risk issues identified by the Regional Inter-departmental Committees Bushfire.⁵² At the most recent meeting of the SICB on 1 March 2021, the Committee has been reconstituted to be named the State Bushfire Committee (SBC). It was also determined at the meeting that the SBC reports to Queensland Disaster Management Committee (QDMC) through the State Disaster Coordination Group (SDCG) and reflected this in amendments to the SBC Terms of Reference.

Regional Inter-departmental Committee Bushfire

The QBP also establishes the Regional Inter-departmental Committees Bushfire (RIDCB) for each of the seven QFES regions, chaired by the relevant Regional Manager, Rural Fire Service. At the most recent meeting of the former SICB, IGEM understands the SICB also discussed a name change for the RIDCB to Regional Bushfire Committee (RBC). Given the changes to the names of the state and regional bushfire committees, IGEM believes the QBP would benefit from a review and an update to also reflect these changes prior to the commencement of the next bushfire season.

The review also found that QFES faced some challenges in operationalising the QBP to instigate the RIDCB in the North Coast Region. There were limited records available to IGEM to indicate whether the North Coast RIDCB met in 2020. Some stakeholders have indicated they felt the North Coast RIBC was a duplication of the Fraser Coast Area Fire Management Group (AFMG) and member agencies faced challenges in finding appropriate representatives to attend both the RIDCB and AFMG meetings. Greater flexibility should be given to regional managers to adapt the plan to suit their locality to streamline committees while ensuring transparency of decision making.

Area Fire Management Groups

AFMGs are also established under the QBP and are required to develop a bushfire risk management plan for the relevant local government area, provide a forum for stakeholders to discuss planning, preparedness, response and recovery. They must also provide plans of bushfire mitigation activities to the now RBC and report to the LDMG regarding mitigation activities and residual bushfire risk. The Fraser Coast AFMG endorsed the annual Bushfire Risk Management Plan (BRMP) for the period of 1 April to 31 August 2020. The purpose of the BRMP is to identify and record high-risk localities, high risk hotspots and planned mitigation activities for QFES's Operation Cool Burn.⁵³ QFES advises the Fraser Coast AFMG met twice in 2020, on 16 March and 8 September.

A Locality Specific Fire Management Group (LSFMG) may be established under the QBP on an as needs basis. LSFMGs are responsible for developing a localised plan regarding mitigation and response to bushfire to submit to the AFMG.⁵⁴ QFES has advised an LSFMG for K'gari was established by the Fraser Coast AFMG however the group has not met for the last two years. The review found a LSFMG meeting was scheduled for 24 March 2020, however, was cancelled due to the emergent COVID-19 pandemic and no subsequent meetings were planned or undertaken virtually.

Recommendation 6

The Inspector-General Emergency Management recommends the Locality Specific Fire Management Group for K'gari meet at least twice per year, in person or virtually.

Disaster Management Groups

The QSDMP sets out that Queensland's disaster management arrangements may be coordinated at the local, district and state level by a disaster management group.⁵⁵ Activation of response arrangements occur in accordance with four levels including Alert, Lean Forward, Stand Up and Stand Down.⁵⁶ In accordance with section 4A of the DM Act, local governments are primarily responsible for responding to disaster events in their local government with district and state levels providing appropriate resources and support.

As outlined in the Disaster Management Guideline, the timely activation of a Local Disaster Management Group (LDMG) is critical for an effective response to a disaster event. The decision to activate a LDMG depends on several factors including the perceived level of impact to the community from a disaster event. The activation of the District Disaster Management Group (DDMG) is the responsibility of the District Disaster Coordinator in consultation with the LDMG, DDMG or the QDMC. Activation of the DDMG does not rely or depend on the declaration of a disaster situation or the activation of disaster financial assistance arrangements.⁵⁷

Queensland Parks and Wildlife Service Fire Referral Group

QPWS is a division of DES, responsible under the QBP for fire management and responding to bushfires on its land; and maintaining a firefighting capability to meet this responsibility.⁵⁸ The plan outlines fire prevention functions to be undertaken by QPWS include conducting planned burns, monitoring bushfire risk and fire danger conditions, identifying protection areas and maintaining a road network and fire lines on the land it manages.⁵⁹

Fire management on K'gari is undertaken in accordance with the Great Sandy National Park Fire Strategy. QPWS operates an internal agency Fire Referral Group for K'gari. Membership of the group includes: the respective Principal Ranger and Senior Ranger/s responsible for the fire program; technical natural resource management staff; Traditional Owners representatives; and relevant technical experts as required. Attendees are recorded within the meeting minutes. Inquiries indicate the K'gari Fire Referral Group is scheduled to meet annually however only the minutes for meetings in December 2017 and February 2019 have been identified.

Consultation Insights

IGEM notes the Consultation Insights section of this report reflects the perspectives of the stakeholders engaged in IGEM forums and through written submissions.

First Nations

The following insights are drawn from a written submission and review consultation activities conducted with the Butchulla people.

The Butchulla people would like to increase their level of consultation and dialogue about land and fire management on K'gari, in line with their Native Title Determination. They identified the importance of protecting places of cultural significance and their desire to undertake culture heritage surveys on the island. There is opportunity for them to partner with QPWS to map areas of cultural significance as part of current activities.

The Butchulla people expressed a concern about the impact of the fire on the ecology of the island and would like future fire management plans to incorporate traditional burning methods. They expressed a willingness to work collaboratively with QPWS and other agencies in this regard. Other areas of concern for the Butchulla people included the need for more regular burning, more manageable block sizes and improved maintenance of trails and firelines.

The Butchulla people would like to see an increase in visitor education about the dangers of fire to the island. They expressed that a greater role in compliance activities would help them care for country and assist with educating visitors and the community.

The BAC acknowledged the role of Butchulla representatives in the Incident Management Team (IMT) and Incident Control Centre (ICC) for the K'gari bushfire and expressed a desire for this to continue. Both QPWS and QFES have indicated their support for this. Butchulla teams also contributed to the response, providing firefighting resources and cultural heritage assessments. They would be interested in participating in more training with partner agencies to increase their capability for future events.

The Butchulla people agreed that the fire has resulted in better conditions to conduct damage assessment surveys. The BAC has identified the benefits of combining traditional and cultural knowledge with technology to assess the event's impact.

The Butchulla people noted the benefits of working with agencies to establish the effects of aerial firefighting and its impact on future environmental and cultural management. They identified an opportunity for proactive work around water sources and the effects of suppressants on the island's environment and cultural sites.

A number of prospects were identified during consultation for researchers to undertake work with the Butchulla people. These include the environmental impact of the fire, the impact of aerial firefighting, the use of water from the island, and cultural firefighting methodology.

Additional observations were made by the Butchulla people; however, these were outside the Terms of Reference of the review.

Community

The following insights are developed from public submissions and the forums held at Orchid Beach, Happy Valley, Kingfisher Bay (January 2021) and Rainbow Beach (February 2021).

There was strong feedback from the community that K'gari should be managed as a World Heritage site as opposed to a national park. They identified a need for a strategic approach that recognises the unique nature of the island's World Heritage status and ensures it is protected and managed accordingly. They also acknowledged that the co-management arrangements between QPWS and the Butchulla people in their Native Title declaration should also be considered in this context. The community did identify that during an emergency, the speed at which situations may develop and change truncates the timeframes required for decision-making and that pre-event discussions to work through traditional management practices during response operations should occur.

The community raised concerns over what they deemed as overly high fuel loads on K'gari and indicated that limited planned burns had occurred in some areas for a significant number of years, highlighting the Eurong area. The community identified the importance of fire to K'gari's ecology and acknowledged the role weather plays in determining conditions for planned burns.

The community identified some issues with the different protection plans in place for different locations on K'gari, which informs different burn cycles. They felt the approval process between QPWS and BAC to maintain or widen fire trails, from their perspective, is overly complicated. They seek improvement so timely and appropriate mitigation works are underway pre-season. This also applied to the planned burn permit process, which they felt should be standardised across all parties, incorporate a degree of flexibility and use local resources.

The community raised a number of points in respect to preparedness activities, such as the defining of land ownership, hazard assessment and what constitutes 'effective' preparedness and fire management. The community suggested there should be a standard definition of preparedness, and that people just wanted to know they had done the right thing in undertaking preparedness activities. The community did acknowledge the support of Fraser Coast Regional Council in supplying water tanks for Happy Valley preparedness prior to the fire season.

The community sought better planning and availability in regard to resources (specific to operating on sand) to maintain firebreaks on the island. It was acknowledged that QPWS and local fire brigades worked well together on the island in this regard. The community observation was that visitors to the island had increased resulting in greater workloads for rangers but there had been no discernible response to this. However, they sought a greater focus on campfire compliance and increased visitor education on where fires are permitted.

During events the community raised the expectation that agencies would be appropriately resourced and supported with trained personnel and equipment. Additionally, the community are aware that the QPWS Rangers maintain a presence on the island, but the community voiced some frustration at the inability to contact them. They are seeking a mechanism whereby they can contact rangers when needed, including provision for on-call arrangements. The initial reporting of the fire was provided as an example where this service would have been a benefit. In the absence of this arrangement, the community acknowledged the benefits of calling triple zero for all fires on the island.

PUBLIC

The community also identified the known challenges with phone reception (including satellite phones) being intermittent across the Island, raising concerns for residents and visitors' capacity to report incidents. The community spoke strongly to the importance of having contact details for all people on the island (campers, visitors and residents). They identified the importance of QPWS and emergency services knowing exactly where people are for the issue of warnings and evacuations given the vagaries of communications. The community also spoke to the importance of education, for example through signage, and enforcement in respect to the lighting of fires on the island. They noted the value of bushfire response agencies using technology (unmanned aerial systems and satellite) during events for real time information.

The community considered that media messaging during the event was inadequate and did not assist managing expectations, nor did it provide relevant and timely information in respect to situational awareness and threat. They provided the example of the distress for family members off the island in regard to the bushfire occurring near Happy Valley. They did inform the IGEM of the important and acknowledged role played by members of the progress and community associations in Orchid Beach, Happy Valley and Kingfisher Bay, who distributed information and kept the community, both on and off the island, informed during the event.

The community raised the economic impacts on tourism and business operators caused by the sudden restrictions on access to K'gari on 27 November 2020. They expressed the desire for improved consultation and communication with locals, consideration of advance warning leading to whole of island decisions. They highlighted what they considered discrepancies between allowing visitors already on the island to stay but restricting new visitors to areas no longer under threat. The community spoke to a risk-based approach for each individual township rather than a blanket restricted access to the island.

There was consensus from the community that better provision of information to the community and visitors should be a focus for all agencies, this would assist in clearing up confusion around road closures, permits for camping versus accommodation and the process by which enquiries could be made.

The community suggested that the fire has provided an opportunity for an enhanced approach to fire management on the island across all responsible agencies, in partnership with communities, businesses and the Butchulla people. On a positive note, they spoke about how the event had brought people together, empowered the community, strengthened partnerships and raised awareness of the need for more resources on the island.

Additional observations were made by the community; however, these were outside the Terms of Reference of the review.

Tourism and Business

The following insights have been developed from public submissions and the community forums held at Kingfisher Bay, Urangan (January 2021) and Rainbow Beach (February 2021).

The business community expressed that they had hoped for QFES to have engaged earlier in the fire response in contributing to the efforts to reduce the spread of the fire and thereby mitigating the impact on the island. They were keen to understand more about the process of handover of a fire between QPWS and QFES.

The business community sought greater and more regular communication through personal networks and local relationships, which they identify as the key to sharing of information in a dynamic environment. They acknowledged that communication challenges are a feature of working and living on K'gari. They had a firm view that public information, proactive media and general communication could have been improved and this is an opportunity for future events. They highlighted what they considered a good example of public information being the text messaging group set up by the Happy Valley Community Association, used to share situational awareness, keep in contact and check community welfare. The business community also highlighted the communication and messaging associated with the Tasmanian bushfires in January 2020 as good practice but acknowledged that delay in media coverage compared to real time events could also create uncertainty.

The business community expressed respect and gratitude to the QPWS rangers who they considered functioned well with the resources at their disposal. They also expressed an interest in the process of undertaking risks assessments on the island and whether community engagement and additional resources would be beneficial in this regard. The business community acknowledged that the topography of K'gari adds a degree of complexity, along with multiple tenure types, various agencies with differing responsibilities and approval processes. They gave an example of proposed emergency management activities which cross tenure boundaries requiring the involvement of QPWS, the Department of Resources, Fraser Coast Regional Council and/or the Butchulla people through the BAC for cultural heritage clearance.

The business community also expressed their concern regarding the perceived negative impact of media coverage during the event and the impact on the island's reputation as a World Heritage and iconic tourism site. They were disappointed that more was not done to reflect the opportunities in areas not impacted by the fire, promote business opportunities and clarify any potential long-term impact on the island's status. They also expressed an interest in understanding the implications of aerial firefighting and what, if any, impact there may have been on the island now and in the future.

The business community highlighted significant personal financial losses as a result of the fires and the associated access and movement restrictions to the island. They explained the impact on future bookings and cancellations after the island reopened, reporting that clients had expressed concern over the impact of the fires. They expressed a view that the impact of the fire had compounded their financial losses from the 90-day COVID-19 closure of the island earlier in the year. They asked that more cognisance be taken of the impacts of island closures on businesses and where possible consultation be undertaken prior to making such decisions.

Additional observations were made by the business community; however, these were outside the Terms of Reference of the review.

Research

The following insights are developed from public submissions and a virtual forum held in February 2021 involving members of the research community with specific interest in K'gari.

The researchers reflected on the management of K'gari as a World Heritage area, and whether this was in line with community expectations. The vastness of the island was noted and considerations about the appropriate resourcing levels, particularly for visitor management and fire management. Tourism was noted as a major factor for K'gari's environmental management and K'gari's World Heritage values. Opportunity to include the island's cultural values in the World Heritage declaration was also discussed.

The researchers noted the lack of cultural burning on K'gari in past years and acknowledged recent efforts to implement traditional fire practices. They highlighted the important role of the K'gari QPWS rangers who are Butchulla people, as well as the Butchulla Land and Sea Rangers, and believe their experience could be better leveraged.

The researchers discussed the need to better understand fuel loads on K'gari, noting that different agencies have different approaches and ways of classifying and measuring vegetation. The researchers also queried how well the current knowledge about prescribed burning has translated into Queensland's scenarios, as there is a perception of a focus on southern Australian conditions.

The need for more 'live' data about K'gari to help inform risk assessments resonated among the researchers. They spoke of the benefits of new technologies and early detection systems such as sensors, camera networks and satellite imagery and its use for day to day management as well as during disasters and emergencies.

Consensus was expressed about the importance of incorporating traditional knowledge into response operations. The researchers suggested that improving protocols could help identify areas of cultural and environmental significance prior to an event.

The researchers discussed concerns about the impacts of fire retardant and salt water on both the natural and cultural environment. This was identified as an opportunity for new research.

Additional observations were made by the researchers; however, these were outside the Terms of Reference of the review.

Preparedness

Preparedness is defined in the QSDMP as taking measures to get prepared for a disaster event such as a bushfire. Disaster preparedness builds on existing community and individual awareness of risk and participation in disaster management activities. Preparedness activities are centred on three key elements: planning, capability integration and community engagement.⁶⁰

Understanding risk

The review found local stakeholders including Traditional Owners, residents and property owners, tourism and business operators had a very sound understanding of bushfire risk. Many of the stakeholders who engaged with IGEM had extensive experience on the island and were directly involved in land and bushfire management, with several individuals actively involved in volunteering with the local Rural Fire Brigade. Others were employed as QPWS rangers or involved in the Land and Sea Ranger programs.

A strong theme that emerged across all stakeholders were shared concerns about the level of bushfire preparedness and hazard mitigation activities currently undertaken on the island. Many stakeholders described what they perceived as a significant decrease in the number of fire breaks and trails on the island and a lack of maintenance, reduction in the number of hazard reduction activities in recent years, particularly by QPWS given its day-to-day management of the island, a lack of coordinated bushfire and community engagement activities between land owners and government agencies on the island, and the inability to seek and gain their own approvals to undertake clearing or planned burns around the townships.

Queensland Emergency Risk Management Framework

In accordance with the QSDMP, QFES is responsible for the state-wide disaster risk assessment, and utilises the Queensland Emergency Risk Management Framework (QERMF) as the methodology for assessing disaster related risk. QFES has advised the QERMF is delivered through risk assessment workshops for LDMGs and DDMGs which encourage engagement between disaster management groups and AFMGs. Disaster management plans for the LDMG and DDMG reference the QERMF as part of risk management approaches undertaken by the groups. Stakeholders however noted the complexity of implementing the QERMF process and that it would require extensive resources to implement across all agencies.

IGEM understands a QERMF workshop was conducted by QFES approximately three years ago with the Fraser Coast LDMG and an action plan provided. This was put on hold by Fraser Coast Regional Council due to the level of financial and staff resourcing required to implement. An independent review was commissioned by QFES into the overall effectiveness of the QERMF methodology to ensure it best meets the needs of stakeholders. An outcome of this review has not been provided to IGEM, however QFES advises the outcomes of the review will be provided to the State Disaster Coordination Group once completed.

Area Fire Management Group risk management

As the primary agency for bushfire in Queensland, QFES undertakes a lead role in coordinating stakeholders to share information about bushfire risks and mitigation priorities, including opportunities for joint hazard reduction activities such as planned burns. This

PUBLIC

includes coordinating stakeholders, chairing AFMGs, and sharing data about bushfire risks and mitigation priorities to reach consensus on tenure-blind, joint priorities. QFES has advised IGEM this work is underpinned by risk, community capability and shared priorities as well as principles drawn from QPWS' Good Neighbour Policy. One of the key objectives of the Good Neighbour Policy is that land management practices are more effective if they are developed in consultation with neighbours and local communities, made available to neighbours and implemented co-operatively across landscape.⁶¹

AFMG membership is largely location-dependent, but typically includes major landowners and managers such as Traditional Owners, local government, QPWS, Department of Resources, HQ Plantations, utilities organisations, Department of Transport and Main Roads, and other agencies.⁶² For K'gari, there are two Fire Management Groups established by QFES including the Fraser Coast AFMG which encompasses the whole Fraser Coast Regional Council area and a LSFMG specifically for K'gari (Fraser Island). However, IGEM notes the latter has not met in recent years.

QFES has advised IGEM it will reinvigorate this group and undertake regular LSFMG meetings to provide a better linkage to the Fraser Coast AFMG. For the LSFMG for K'gari to address the concerns of the local community it must seek membership from a wide range of local stakeholders including the BAC, residents and community associations from each township on the island, and tourism and business operators. It is hoped this will help better engage the local community, and other land managers on the island, and provide greater visibility of K'gari's bushfire risk in the region's BRMP which is noticeably absent in the 2020 plan.

QFES has advised that it will expand the Fraser Coast AFMG and the K'gari LSFMG membership to include relevant stakeholders such as land management agencies and owners, the Butchulla Aboriginal Corporation and Community Associations to ensure membership reflects the community it represents. This would be welcomed given strong representations to see a better interface and engagement with the community in planning for bushfire mitigation activities.

It is worth noting that while minutes from the two Fraser Coast AFMG meetings in 2020 show K'gari was briefly discussed, no location on the island was identified as one of the group's top five priority areas for mitigation outlined in the BRMP. This is despite a map sourced from the BRMP showing K'gari has one of the highest potential bushfire intensity areas in the Fraser Coast local government area, denoted by the maroon and dark red colouring in Figure 3 below.

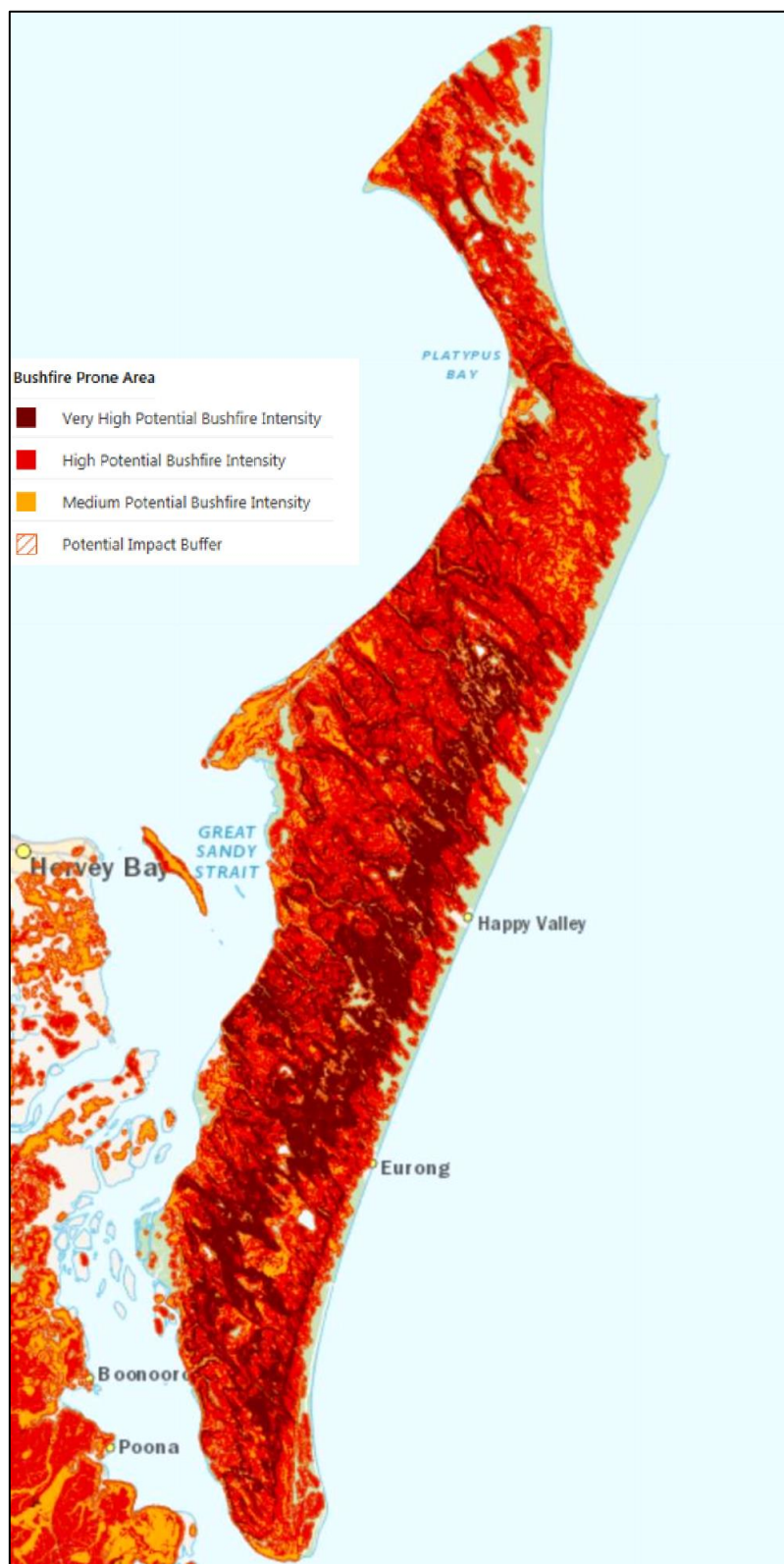


Figure 3: Bushfire Prone Area Map (Source: Fraser Coast AFMG, Bushfire Risk Mitigation Plan)

The AFMGs identify areas of highest priority for mitigation and include mapping, data and stakeholder knowledge. These assessments help guide regional bushfire preparedness and planning priorities and formulate the AFMG's BRMP. The BRMP includes top five locations for prioritised mitigation activity underpinned by risk information and mapping of the local area including Bushfire Prone Area maps.

PUBLIC

The BRMP also includes data and mapping related to the risk of exposure in the Bushfire Interface Zone which focuses predominately on people and structures, rather than significant environmental areas. This means when rating the top five locations in a region based on risk factors including the number of people or buildings near an interface zone, locations like K'gari which have significantly less people and buildings will struggle to be included in the priority locations for a regional AFMG. This creates an even greater need for a well-functioning LSFMG to focus on areas like K'gari that are environmentally significant and need their own approach.

The plans and the data that sits behind them for AFMGs in Queensland are not readily made available to the community. It is often very difficult for a member of the public to access or find this information without an intimate understanding of Queensland Government systems and agencies. Queensland's Rural Fire Service website provides a "Bushfire Postcode Checker" mapping function. The map provides the same layer across Queensland with no real differentiation between areas of greater or lesser risk. Community understanding of local risk would be greatly improved in Queensland with better access to bushfire risk and planning information across the board and should be facilitated by agencies like QFES which is responsible for the state-wide risk assessment. The Victorian Government's Safer Together website and New South Wales Rural Fire Service's Bushfire Risk Management Plans are an example of bushfire risk information made available online in an easily understood manner for the community.

Good practice example - NSW Rural Fire Service Bushfire Risk Mitigation Plans

Local Bushfire Management Committees are established under the *Rural Fires Act* (NSW), by the NSW Bushfire Coordinating Committee. Across the state, committees are established in areas subject to a reasonable bushfire risk. Each committee is required under legislation to prepare and submit a draft Bushfire Risk Mitigation Plan.

A range of stakeholders sit on the Local Bushfire Management Committees including NSW Rural Fire Service, local government, Farmers Association, National Parks and Wildlife Service, other departments and major landowners and managers.

The committee prepares a draft plan which sets out a five-year program of community engagement and hazard reduction activities to be undertaken by relevant land managers. It also covers private and public land.

The NSW RFS, via its state-wide Bushfire Coordinating Committee, receives and invites public comment on draft Bushfire Risk Management Plans. These plans undergo a public consultation and feedback phase. In finalising a plan, the Local Bushfire Management Committee must consider all public submissions received.

A copy of each Bushfire Risk Management Plan for over 59 local areas is made available to the public for download from the NSW Rural Fire Service website.⁶³ A copy of each Bushfire Risk Management Plan for over 59 local areas is made available to the public for download from the NSW Rural Fire Service website.⁶⁴

Recommendation 7

The Inspector-General Emergency Management recommends all Area Fire Management Groups in Queensland make their Bushfire Risk Mitigation Plans, bushfire risk mapping and methodology easily understood and available to the community. All public plans should be dated to ensure currency and incorporate mechanisms for community feedback.

Queensland's current BRMPs include Bushfire Prone Areas, which are similar to a Bushfire Hazard Area under Queensland's State Planning Policy. This identifies land that is likely to support a significant bushfire and could be subject to impacts from a significant bushfire. Under the State Planning Policy, local government planning schemes must identify a Bushfire Prone Area in order to avoid or mitigate the risk of bushfires, protect people and property, and enhance the community's resilience to bushfires. Bushfire Prone Area mapping data can be accessed from online systems operated by the Department of State Development, Infrastructure, Local Government and Planning. These systems provide localised risk information however this is not readily available to the community and not packaged in an easily digestible manner alongside other bushfire risk information, like what is available in other jurisdictions. It is unlikely a member of the community seeking information about their local bushfire risk is going to access an online town planning mapping system. This information should be more readily available to the community.

Good practice example – 'Safer Together' bushfire risk website

Safer Together is a joint initiative between fire and land management agencies in Victoria to reduce bushfire risk on both public and private land, as a result of Victorian IGEM recommendations. Through the initiative, bushfire risk is measured using local knowledge, field data and bushfire simulation technology.

Bushfire risk is publicly displayed on the Safer Together website in an easily digestible manner for the community including a region by region breakdown of risk and publicly available bushfire management strategy for each region. A range of online resources are available to the community including information about understanding bushfire risk.⁶⁵

As part of the initiative, Victorian agencies have also moved away from a hectare target for planned burns to a risk reduction target for bushfire management, creating a more integrated approach across public and private land.

Hazard mitigation

Hazard mitigation activities are those actions undertaken to decrease the impacts of a disaster on people, infrastructure and the environment.⁶⁶ Bushfire mitigation activities can include prescribed burns and maintenance of fire lines and breaks. In Queensland, QFES is the lead agency for bushfire mitigation programs, however all land managers and owners have a shared responsibility to reduce fire risk on their land.

Running annually from April to July, Operation Cool Burn is a designated period when QFES works closely with landowners and managers to focus on planned burns and other activities.⁶⁷ Operation Cool Burn activities undertaken on K'gari during 2020 include:

- Department of Resources and Happy Valley RFB widened containment lines around the Happy Valley township.

PUBLIC

- Happy Valley RFB undertook hazard reduction burns around the township including on the Department of Education block, aligned with the community's Hazard Reduction and Fire Management Plan.
- Riverheads (Kingfisher) RFB undertook hazard mitigation activities in the Kingfisher Bay Resort and Village precinct and surrounding the resort's workshop.
- Orchid Beach RFB undertook hazard mitigation around the Orchid Beach township.

Prescribed or planned burn programs

Prescribed burning is defined as the controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity, and rate of spread required to attain planned resource management objectives.⁶⁸ IGEM notes planned burning and prescribed burning are terms often used interchangeably.⁶⁹

Planned burn programs on K'gari are predominately managed by QPWS as the majority land manager on the island. Smaller tenures are also managed by the Department of Resources, Fraser Coast Regional Council and other state agencies. QPWS hazard reduction and fire management programs, including planned burning, are recorded in the agency's FLAME system. This system is QPWS's primary fire management information system used for prevention and mitigation planning and implementation. Planned burn proposals are developed by operational staff and submitted to the Fire Referral Group. QPWS also attends the Fraser Coast AFMG meetings, which are chaired by QFES, to brief the group on the planned burns identified by their agency and discuss any opportunities for cooperative or multi-tenure burns.

Through this review, IGEM has heard feedback from the community about what they perceived as a reduction in the amount of planned burn activity since QPWS assumed management of the island in 1992. Residents also expressed a need to balance the Native Title, cultural and environmental requirements of the island with undertaking appropriate levels of hazard reduction burning. In recent times residents have felt while a small number of burns have been completed, there may be a reluctance to undertake or approve further hazard reduction burning on strategic land parcels around townships in Orchid Beach, Eurong, Happy Valley and Kingfisher Bay.

Many of these residents felt the community should be included in the initial planning process for hazard reduction burns and that traditional burning methods, cool burns and Traditional Owners should be included into the program to encourage stronger dialogue and working relationships with the community, RFBs and local businesses. IGEM considers reinvigorating the K'gari LSFMG and expanding the membership will encourage better engagement with the community to prioritise strategic burns around townships.

The Institute of Foresters of Australia and the Australian Forest Growers advised IGEM from the early 1960's the Queensland Department of Forestry reintroduced a pattern of prescribed burning using Traditional Owners' mosaic burning patterns. As a result, the area of land affected by wildfires significantly reduced. Figure 4 below, supplied by the Institute, shows the annual prescribed burn and wildfire areas on K'gari. The figure uses a five-year rolling average sourced from QPWS records, old management plan data and Landsat fire scar mapping. The graph shows the amount of area subject to prescribed burns in comparison to the area subject to wildfire over the same period. A recent increase in wildfire activity correlates to the bushfires on the island in 2019 and 2020.⁷⁰ QPWS has advised the changes can partly be attributed to the move from timber harvesting to practices aimed at conserving and regenerating natural ecosystems.

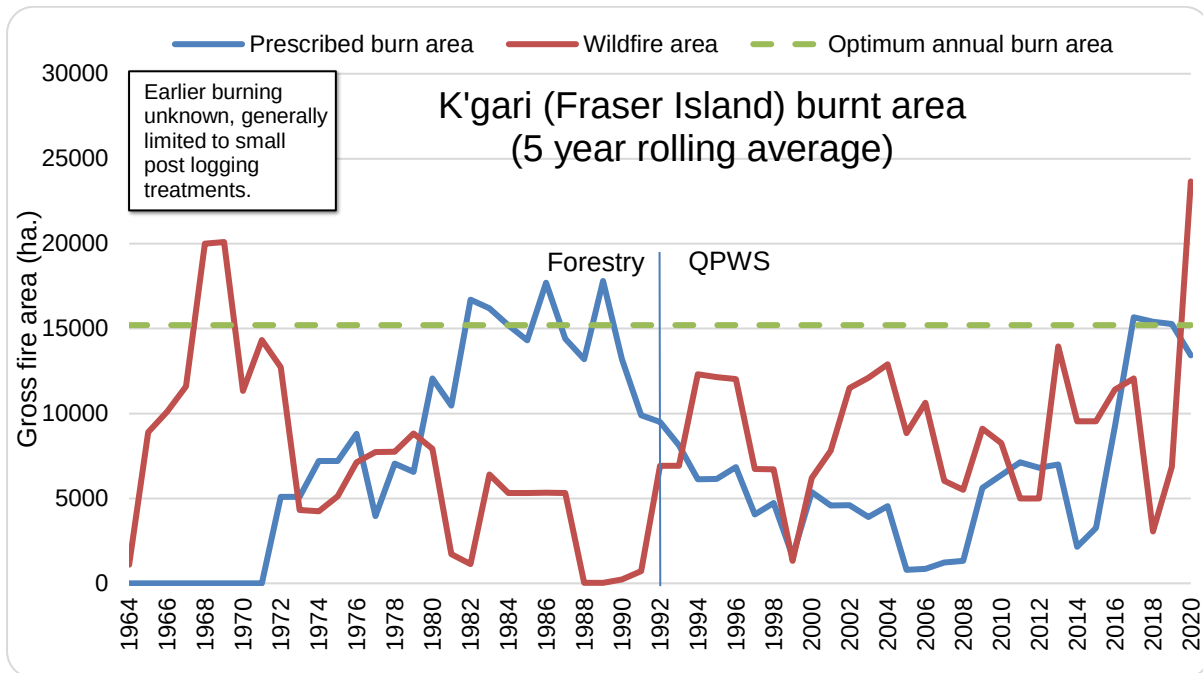


Figure 4: K'gari (Fraser Island) burnt area (5 year rolling average) - Institute of Foresters of Australia

QPWS has advised the agency has undertaken 61 planned burns on K'gari and treated over 80,000 hectares in the last five years. In 2019 and 2020, the agency has advised its efforts were focused on eight, complex hazard reduction burns in Protection Zones around communities and other infrastructure at key sites including Happy Valley, Orchid Beach West and Platypus Bay Ocean Lake. In September 2020, QPWS also assisted the Rural Fire Service to undertake a planned burn at Kingfisher Bay Resort.

Case Study – National Burning Project

Established in 2011, the National Burning Project was a joint initiative of the Australasian Fire and Emergency Services Authorities Council (AFAC), the Forest Fire Management Group and the Commonwealth. The project has resulted in nationally agreed principles, guidelines and frameworks, covering objective setting; strategic, program and operational planning; risk management; and training and performance measurement.

The project's *National Position on Prescribed Burning* is endorsed by all Australian fire and emergency management agencies. It outlines ten principles for prescribed burning including protection of life, landscape health, risk management, engagement with stakeholders, measurable outcomes, traditional owner knowledge, capability development, integrated approach, and governance.

The project's resources include the Prescribed Burning Measurement Framework, which contains 23 Key Performance Indicators to inform performance measurement of prescribed burn programs.

AFAC Council endorsed the National Position in October 2016 and a review is scheduled in 2021. National prescribed burning guidelines and frameworks, <https://knowledge.aidr.org.au/resources/national-prescribed-burning-guidelines-and-frameworks/>

Recommendation 8

The Inspector-General Emergency Management recommends a prescribed burn program for K'gari be developed by the Department of Environment and Science, in collaboration with the Locality Specific Fire Management Group and the Butchulla people, based on the principles of the *National Position on Prescribed Burning*. This program should incorporate a process for monitoring and evaluation of outcomes and integration of evolving fire management practices.

First Nations' fire management practices

The *Cultural Burning Practices in Australia Background Paper* prepared by the Royal Commission into National Natural Disaster Arrangements describes the intersect between cultural and prescribed burning:

Cultural burning is the term used to describe burning practices developed by Indigenous Australians to enhance the health of the land and its people. This included burning, or prevention of burning, of Country. Like cultural burning, non-Indigenous 'prescribed' or 'hazard reduction burning' is the process of planning and applying fire to a predetermined area, under specific environmental conditions, to achieve a desired outcome – usually the mitigation of the presence or severity of bushfires. While there are crossovers between the two practices, Indigenous burning has a cultural outcome, purpose or significance.⁷¹

IGEM has been advised of the low intensity of the fire used for cultural burns, and the benefits this provides to the landscape. IGEM saw an example of 'upside down' country during a learning tour with the Butchulla Land and Sea Rangers. This occurs due to hot, intense fires where the trees and their crowns are burned and only grass and weeds have regrown. During discussions with a stakeholder with experience in traditional burning practices, IGEM was advised by a traditional burning practitioner that the time to conduct a cultural burn is based on ecology not on prescribed timeframes. It was identified that this requires monitoring of the landscape and may occur at different times of the year, including at times when fire management entities do not usually conduct hazard reduction burns. Figure 5 below depicts the impact of a lower intensity fire on K'gari during the event:



Figure 5: Results of a successful backburn (Source: Traditional burning practitioner)

The Royal Commission into National Natural Disaster Arrangements recognised First Nations' knowledge in land and fire management practices have a role in improving natural disaster resilience and should be leveraged to inform public land management activities.⁷² In 2019, the Department of Home Affairs conducted the National Disaster Risk Information Services Capability pilot project. This project has noted the different worldview of Indigenous land management practices, identifying its value to disaster risk reduction. Further, the project notes that improving integration of First Nations fire and cultural burning into current practice, and a recognition of the differences in scale and timeframes, is a key challenge.⁷³

QPWS has included BAC representatives on its Fire Referral Group, which considers fire mitigation priorities for K'gari. The BAC is also part of the QPWS Strategic (Administrative) Working Group which meets every two months to facilitate cooperative management. However, discussions with IGEM have revealed limited cultural burning strategies or programs currently exist for K'gari. IGEM notes that targeted cultural burning requires permission from QPWS and further engagement between the parties may assist with improved implementation of these practices. IGEM also notes the existing traditional burning experience within the Butchulla people, including the Land and Sea Rangers, and Butchulla who are currently employed as QPWS rangers on the island. DES has recently announced the current Land and Sea Ranger Program will be expanded across Queensland.⁷⁴ Opportunities exist to build capacity and better leverage existing experience to inform the future fire management regime for K'gari.

IGEM notes that the *National Position on Prescribed Burning* includes the principle that Traditional Owner use of fire in the landscape be acknowledged, and that integration of this knowledge into current practices should be actively supported and promoted.⁷⁵ A prescribed burn program for K'gari that is based on the national principles is the subject of Recommendation eight of this report.

Track and fireline maintenance

QPWS is responsible for fire management on the land it manages. As part of this role, the agency is responsible for maintaining an extensive network of firelines and access tracks. QPWS maintains approximately 600 kilometres of firelines on K'gari. The agency has an annual budget for maintenance of the island's road network with further funding allocated to maintain roads that double as strategic firelines.

It is also important to note that while QPWS maintains a network of firelines, these are not firebreaks. QPWS has also noted the term 'fireline' should be used in preference to 'firebreak' to avoid the perception that a fire will stop at a break. QPWS has advised that the purpose of firelines is not to stop fires, but rather to provide access and as a starting point for backburning as fires under adverse conditions in these landscapes can spot over one kilometre.

QPWS has a Procedural Guideline that helps guide the classification, maintenance and marking of firelines. Under the guideline, the main access roads between the east and west side of the island are considered strategic firelines or Class 2 which require a four-metre clearance and are suitable for medium fire appliances. The majority of firelines on K'gari are a mixture of Class 3 which require a minimum four-metre clearance of vegetation and are suitable for suitable for four-wheel drive vehicles such as a Landcruiser or equivalent, and Class 4 fire lines which have no minimum width of track of clearing and are more suitable for firefighters on foot.

Many stakeholders expressed a view about the current status of overall track maintenance on the island and what they perceived to be a reduction in the number of firelines since the island transitioned from the management of the Department of Forestry to QPWS in 1992. Some residents showed IGEM the previous forestry maps outlining the firelines and tracks across the island. They felt in comparison to the forestry maps dated pre-1992, the number of firelines had dramatically reduced along with access points across the island. One of the major challenges for firefighting and emergency vehicle response cited by a number of local firefighting representatives is that many of the sand tracks on the island are only single vehicle width. This requires vehicles to pull over to allow passing, creating safety concerns in an emergency response. It is understood some access points may be reduced by QPWS to allow for conservation and to reduce impact on severely eroded parts of tracks.

Other stakeholders advised they believed that many firelines on K'gari have not been developed to a standard to be considered proper firebreaks and this should occur. IGEM has not assessed this as part of this review, however QPWS has advised that this may be due to the increased consideration of K'gari's World Heritage listing and the cultural significance of areas maintained or expanded as firelines. The Institute of Foresters of Australia and the Australian Forest Growers suggested that an adequate network of fire access tracks and strategic fuel breaks be maintained to support safe burning operations and wildfire response.

Recommendation 9

The Inspector-General Emergency Management recommends a collaborative review of firelines, tracks and trails on K'gari be undertaken by the Department of Environment and Science, in collaboration with the Locality Specific Fire Management Group and the Butchulla people, to ensure an adequate network is agreed by relevant stakeholders, and roles and responsibilities for maintenance are agreed and documented.

K'gari Community Preparedness

A significant amount of community preparedness and planning was undertaken by residents, property and business owners in readiness for a bushfire event. IGEM was impressed by the organisation and levels of engagement achieved by the Orchid Beach Progress Association, Happy Valley Community Association and Kingfisher Progress Association to bring their communities together, undertake specific bushfire mitigation activities and share information. These associations were aided by expert advice and assistance from the Orchid Beach and Happy Valley RFBs. IGEM acknowledges the efforts of the Kingfisher Bay Resort and Village management and the River Heads RFB located onsite which had resulted in mitigation activities around the resort property in the lead up to the bushfire season. IGEM notes the residents and RFB from Eurong are engaging with the Happy Valley Community Association and RFB to apply some of their learnings around mitigation and response from the recent bushfire event around their own township.

Good Practice example – NSW Community Protection Plans

Since the introduction of the bush fire risk management planning framework, a range of different community level planning documents, Community Protection Plans (CPP), have been developed for high risk areas throughout NSW. The objectives of CPPs are to empower communities to make decisions and take responsibility for their own safety by increasing their understanding of bushfire threats and providing information to assist in preparing personal Bush Fire Survival Plans. The plans help to identify, assess and depict contingency options available to a community during a bushfire.

The 2009 Victorian Bushfires Royal Commission into the 'Black Saturday' bushfires delivered several recommendations that reiterated the importance of educating the community on the most appropriate actions to take prior to and during a bush fire. Recommendations 1-5 of the final report, relating to bushfire safety policy, provided the direction for the CPP framework. In response to recommendations from the Victorian Royal Commission, the NSW Government has committed to developing local planning strategies for communities at risk of bushfire, along with a commitment to integrate Neighbourhood Safer Places, evacuation and CPPs.⁷⁶

Case Study - Happy Valley Community Planning

Property owners formed the Happy Valley Community Association in 2019. One of the first projects was to work together with the Happy Valley Rural Fire Brigade to develop a Hazard Reduction and Fire Management Plan for the Happy Valley Township, following an assessment of fuel loads around the township by brigade representatives categorising it as “undefendable”.

IGEM understands a series of community meetings were held in January 2020 to provide input to the plan, which was endorsed in February 2020. The Happy Valley Rural Fire Brigade then proceeded to implement the plan and undertake hazard burns, which were delayed until late May due to COVID-19.

The plan divided the township into sectors and outlined hazard mitigation activities including planned burns, clearance of fire control lines and creating safe access to the helipad. The plan noted the preference for evening ‘cool’ burning. It also outlined the need to install a water supply close to the centre of the township for firefighting purposes. The plan detailed that a series of water reserves at strategic high points should be placed on unallocated state land around the township and a system of water tanks installed.

Fraser Coast Regional Council as part of its Community Coordination Committee initiative, allocated funding in the council budget to fund and install two water tanks around the township. These were installed just prior to the K’gari bushfire event. Planned burns were also undertaken by the Happy Valley RFB over a period of three months in the lead up to start of bushfire season. A hazard reduction burn on the block owned by the Department of Education in the township was conducted in August 2020. IGEM understands fire approached this block in December 2020 and, as shown in Figure 6, the fire slowed and completely stopped at this point where it met the previously burnt area.

IGEM also acknowledges the extensive work that later went into enacting the Incident Action Plan for the township. As conditions continued to worsen in late November 2020, members of the Happy Valley Rural Fire Brigade and the Community Association began enacting their Incident Action Plan, a copy of the plan was provided to QFES. Residents and property owners who decided to remain in the township were given tasks and responsibilities to undertake as part of the plan. Brigade members also put together a written options analysis for QFES including creating a strategic fire break, clearing tracks and undertaking backburns. These efforts along with the response from agencies and township’s communication plan assisted in the defence of Happy Valley.



Figure 6: Department of Education block, Happy Valley (Source: Happy Valley Rural Fire Brigade)

Interagency arrangements

The review found interagency arrangements particularly between QPWS and QFES for the purposes of cost sharing and use of firefighting assets during the bushfire response was the source of some confusion. Broad arrangements between fire management agencies in Queensland are set out in the *Interagency Protocol for Fire Management* (the Interagency Protocol) between QFES, QPWS and HQ Plantations. Dated October 2009 with a term of five years, the Protocol could benefit from a thorough review following the K'gari bushfire event, evaluation of its effectiveness and updating the protocol to make it more contemporary.

Recommendation 10

The Inspector-General Emergency Management recommends the *Interagency Protocol for Fire Management* be reviewed by all relevant entities, including representatives of the Butchulla people, and be updated as a matter of priority. Entities responsible for the protocol should implement a process for regular review and evaluation of its effectiveness. This review process should be conducted after a major bushfire event, or to reflect any material change to applicable legislation and policy. It should also consider pre-arranged approvals and a range of agreed fiscal protocols between the agencies.

Cost sharing

While the Interagency Protocol states that the parties agree to share resources for joint fire management through consultation and negotiation, each party is required to fully cover their own expenses in joint operations, unless otherwise agreed.⁷⁷ This presented some challenges due to the differing nature of the funding arrangements in place for QFES and QPWS respectively. QPWS advised requests to use firefighting assets such as heavy machinery or waterbombing aircraft must receive financial approval and delegation in accordance with DES's Financial Management Practice Manual. These delegations are assigned to a position

and not a role such as Incident Controller. This may impact on the timeliness of decision and response. IGEM has not been made aware of any pre-determined financial delegations and approvals for appropriately trained QPWS Incident Controllers to deploy significant firefighting resources.

Fire suppression

The Interagency Protocol also outlines the broad arrangements for the coordination of aerial firefighting assets between the agencies. Each party can independently determine the appropriate level of engagement and use of aircraft however the use of aerial assets must be coordinated by the QFES State Air Desk. Some stakeholders have questioned if there were opportunities early in the fire response where waterbombing assets could have been deployed earlier. IGEM understands initial discussions between QFES and QPWS about the use of waterbombing aircraft commenced on 17 October. However, waterbombing operations did not begin until 9 November 2020 or Day 27 of the firefighting effort.

IGEM was advised QFES provided QPWS with a proposal early in the response to undertake waterbombing operations on the fire and associated costings. However, the proposal was declined by QPWS due to discussions between the agencies about no threat to life and property, and QPWS concerns about insufficient advice about the strategic objective and the ability to extinguish the fire in a remote location. QPWS bushfire operations could benefit from a review of the interagency protocol, further engagement between the agencies and a review of pre-determined financial delegations and approvals for Incident Controllers.

QFES has advised the use of additives, including gel, requires approval of the landowner before they can be added to the waterbombing load. Stakeholders have advised IGEM that a DES Procedural Guide regarding the use of bushfire firefighting agents was signed off by the department in August 2020 and QFES also endorsed the guide. IGEM understands the guidance must be considered in accordance with a further Procedural Guide about Air Operations which supports the use of firefighting foams but not retardants on QPWS managed land. QPWS advises the use of retardants is of environmental concern in low nutrient ecosystems and can have long term environmental impacts. These matters had to be considered prior to the commencement of waterbombing operations.

Due to the environmental and cultural significance of K'gari, water sources for drawing fresh and saltwater also required approval from the BAC. On 17 November 2020, the BAC advised QPWS that water may be extracted from specific lakes on K'gari on the condition all efforts were made to minimise environmental damage and to state the loads between fresh and saltwater. Some lakes remained off limits for water collections due to their environmental significance.

Recommendation 11

The Inspector-General Emergency Management recommends the Department of Environment and Science establish pre-determined financial delegations and authority for Queensland Parks and Wildlife Service Incident Controllers.

Capability development

Training and exercising

The Australasian Inter-service Incident Management System (AIIMS) is recognised as the incident management system used by QPWS and QFES. It provides a common operating system to enable the integration of operational protocols, procedures and activities across multiple agencies working together to respond to and resolve incidents. AIIMS identifies three classification levels for incidents, which are explored further in the Incident level section of this report. The Emergency Management Professionalisation Scheme (EMPS) outlines the required national competencies for Incident Controllers, which are delivered through Registered Training Organisations.⁷⁸

IGEM has been advised by stakeholders the majority of Incident Controllers in QFES have been trained to control up to a Level 2 incident. There are limited numbers of Level 3 trained Incident Controllers within QFES, however stakeholders have also indicated a desire to see these numbers increase.

QPWS advises most staff stationed on K'gari are trained as Level 1 Incident Controllers with a smaller number trained as Level 2. Incident controller units of competency were previously delivered by QPWS under its own RTO however this capability has lapsed. As a result, QPWS is currently sourcing a private RTO to deliver the relevant fire and incident management modules. The QPWS Enhanced Fire Management Project (see Case Study *QPWS Enhanced Fire Management Project*) includes an activity to administer training courses up to Level 2 Incident Controller training.

QPWS further advises that it does not conduct regular exercises of its fire response plans or capabilities. Instead, it relies on the use of planned burns and other activities to initiate practical skills within its workforce. QPWS policy is for staff to undertake annual refresher training in fire management and response. IGEM is aware there is no standard format for this training. Discussions with QPWS staff have indicated the benefit of reviewing tactical firefighting objectives and activities as part of this training and embedding these using location-specific scenario-based discussions.

Recommendation 12

The Inspector-General Emergency Management recommends the Department of Environment and Science review its training framework and minimum mandatory training requirements for Queensland Parks and Wildlife Service Incident Controllers to ensure they are appropriately trained to manage significant events

Recommendation 13

The Inspector-General Emergency Management recommends the Department of Environment and Science identify opportunities to increase Queensland Parks and Wildlife Service's capability in incident management and multi-agency fire response, through exercising plans and procedures in collaboration with other stakeholders, including disaster and fire management groups at all levels.

Recommendation 14

The Inspector-General Emergency Management recommends the Department of Environment and Science review the format and delivery of Queensland Parks and Wildlife Service annual fire refresher training to include a scenario-based exercise.

Case Study – QPWS Enhanced Fire Management Project

Following the 2018 bushfires and the IGEM's 2018 Bushfires Review, the Queensland Government committed \$16 million over four years to QPWS to improve its fire management capabilities and processes.

The focus of the Enhanced Fire Management Project (EFMP) is to increase community safety by enhancing QPWS fire management capacity and capability, which includes minimising bushfire risk to people and property from QPWS managed lands. The EFMP's investment priorities aim to improve preparedness and response for populated areas and fire management activities aimed at protecting the highest risk settlement areas.

The priorities of the project include:

- future development of the Bushfire Risk Management Framework
- a review of the QPWS Bioregional Planned Burn Guidelines to ensure the latest science is incorporated, and traditional practices are considered
- rolling out 30 new light attack fire units and procuring three medium attack fire units
- expanding First Nations collaborations and further applying traditional practices across QPWS managed areas to improve early fire response capacity
- accessing and sharing data from the QFES systems which provide fire prediction and fire detection services during response to improve situational awareness and fire detection
- developing a fire management policy that considers First Nations peoples' knowledge, rights and aspirations.

The 'Park eBattle' app has been developed under the EFMP. It consists of a mobile 'Battleboard' available to QPWS Incident Controllers to assist with managing on-scene resources. Incident management team members, crew members, emergency service staff and contractors can download the app to input information during a response. It is designed to provide real-time, critical information on crew health and safety.

Remote Area Fire Fighting Teams

QPWS manages large amounts of land in remote locations. The QBP identifies that the impacts of climate change are expected to result in more severe fire weather days, more intense fires and a general lengthening of the fire season.⁷⁹ The 2020 New South Wales Bushfire Inquiry acknowledges that early fire suppression in remote terrain can be essential to preventing the natural development of large, potentially destructive fires, particularly in areas where vehicle access is not possible due to access, topography or the travel distance involved.⁸⁰

By way of example, the NSW RFS Remote Area Fire Fighting Teams (RAFTs) are seen as "a *pivotal tool to enable Incident Controllers to deal with these situations.*"⁸¹ A joint protocol for use by the NSW Rural Fire Service and NSW National Parks and Wildlife Service (NPWS) applies to any class of remote fire and includes remote prescribed burning operations. RAFTs are established and administered at a regional level on an as-needs basis for incident deployment.⁸² The NSW Bushfire Inquiry noted improvements to the capability and recommended their deployment be based on enhanced research and predictive modelling. It

was also noted prioritising the deployment of a RAFT to enable rapid initial attack may be preferable to ongoing suppression operations, where supported by a risk assessment.⁸³

QFES has advised that it commenced RAFT capabilities in South-East Queensland in 2019 and has been in conversation with QPWS regarding collaborative capabilities. RAFT teams are highly specialised with significant complex equipment, whose deployment requires careful planning and deployment against specific criteria.

During the K'gari event, stakeholders perceived the response may have been more effective if early detection and quick suppression of new ignitions in remote areas occurred. IGEM heard that throughout the response many areas were not accessible. There is opportunity to improve Queensland's capacity to respond in challenging terrain, where different approaches and specialist skills and equipment can meet these challenges.

Good practice example: World Heritage site protection - Remote area firefighting

During the 2019-20 fire season, the NSW National Parks and Wildlife Service's Remote Area Firefighting Team successfully contained 20 of the 41 ignitions across the Greater Blue Mountains World Heritage Area. The ignitions were primarily as a result of lightning strike. All fires were in remote and rugged terrain and the response involved highly trained and skilled crews winching in from helicopters. The successful remote fire suppression by these crews was critical in saving the remaining 20% of the World Heritage area, which remained unburnt. The Remote Area Firefighting Team was also involved in the Wollemi Pine Operation, which was successful in saving the last remaining wild stand of this species worldwide.

For further information see Appendix 10 the Final Report of the NSW Bushfire Inquiry.⁸⁴

Recommendation 15

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services consider expanding specialist Remote Area Firefighting Team capability to assist in responding to significant bushfire events which occur in rugged or inaccessible terrain.

Response

Activation of disaster management arrangements

As a hazard-specific event, a bushfire may result in a LDMG or DDMG being fully activated to assist with supporting the response.⁸⁵ While the Fraser Coast LDMG and Maryborough DDMG were activated to Stand Up during the K'gari bushfire, a full activation of the LDMG or DDMG capability did not occur. The Fraser Coast LDMG moved to Lean Forward on 26 November 2020. This was six weeks into the event and the day prior to the firefighting response transitioning from QPWS to QFES control. The LDMG moved to Stand Up on 2 December 2020 to manage recovery arrangements.

The Queensland Police Service has advised the Maryborough DDMG was at Stand Up level when the bushfire was first reported on 14 October 2020 to coordinate the response to COVID-19. The Maryborough DDMG's status did not change as a result of the bushfire on K'gari. Maryborough District maintained a watching brief on the bushfire as it believed the DDMG was not required to manage or coordinate multiple agencies for the response.

Figure 7 below, which is included in disaster management training, identifies how the hazard specific and disaster management arrangements should work in tandem.⁸⁶

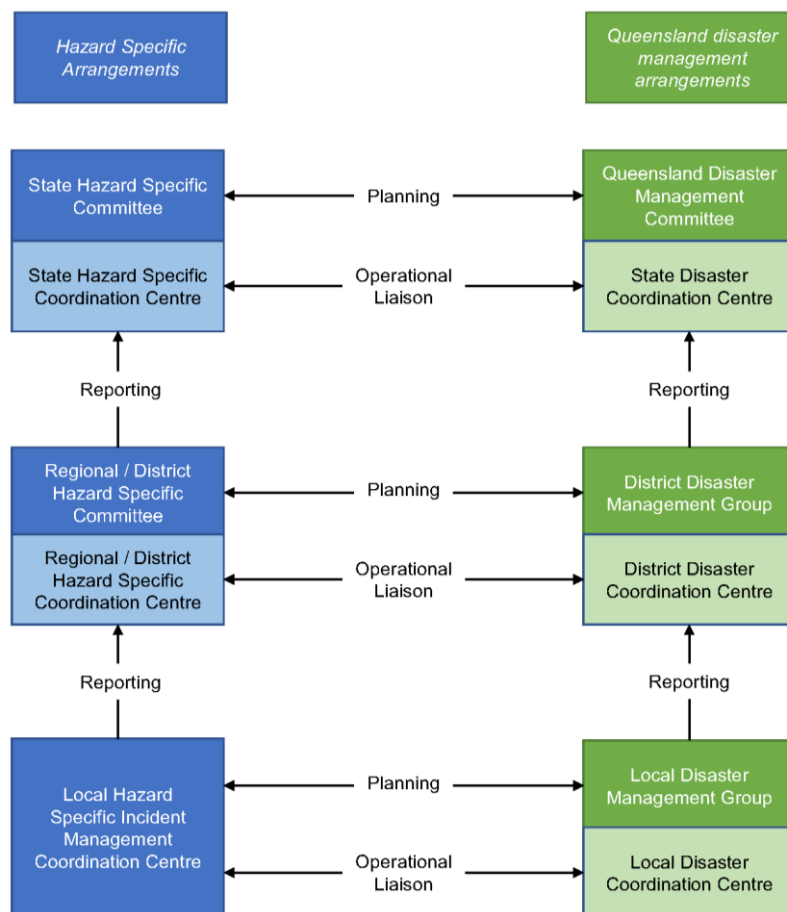


Figure 7: Hazard specific arrangements and the QDMA (Source: QFES, Queensland Disaster Management Arrangements Participant Guide)

Hazard specific plans should clearly identify how arrangements between the management of a hazard specific incident and the disaster management arrangements interact. They should provide clear direction about roles and responsibilities for the response to the hazard, and

when the disaster management arrangements should be active to assist with managing its consequences. Communication, intelligence holdings and protocols should be clearly identified and understood by all stakeholders to ensure a common operating picture. Hazard specific and disaster operations can work in tandem to minimise the potential for serious disruption and impact on communities.

IGEM considers that full activation of the disaster management arrangements for this event may have assisted with a more holistic coordinated approach across planning, liaison and situational reporting.

Recommendation 16

The Inspector-General Emergency Management recommends the next review of the *Queensland State Disaster Management Plan* examines and provides guidance in respect to the application of Queensland's disaster management arrangements to support hazard specific events such as bushfire.

Traditional Owner liaison

During the K'gari event, IGEM has heard that a BAC liaison officer was added to the QPWS IMT during the time it was based at Dundubara. BAC liaisons were in place through the remainder of the response operations, as the IMT moved to Eurong, Rainbow Beach and finally to Howard. BAC representatives told of their pride in representing their community to advise on culturally significant sites and localities and being able to describe their peoples' connection to country. Their involvement also introduced the BAC representatives to the complexities and fast pace of an ICC, where the importance of accurate and timely information is paramount to ensuring rapid decision making. Similarly, officers from other agencies advised IGEM of the value that the BAC presence brought to the operational response and expressed a willingness for this to continue in future operations.

IGEM notes the proactive work undertaken since the K'gari event by QFES North Coast Region to provide disaster management training to BAC representatives. IGEM welcomes the region's commitment to availing this training to other Traditional Owners. Extending this offering to include more specialised functions such as logistics, planning and operations would further benefit the partnership between the BAC and QFES into the future.

Recommendation 17

The Inspector-General Emergency Management recommends entities with responsibilities for land and fire management consider the establishment of Liaison Officer roles for Traditional Owner and First Nations representatives in incident management structures for significant bushfire or disaster events including those that may impact on cultural heritage in Queensland's World Heritage sites.

Queensland Parks and Wildlife disaster management

DES has an Emergency Management Plan that outlines the Department's responsibilities under the QSDMP. The QPWS Coastal and Islands Region, which is the responsible management unit for K'gari, has a Disaster Management Operational Plan (the regional DMO plan) that describes how the region fulfils its roles and responsibilities under the DES

Emergency Management Plan and the QSDMP.⁸⁷ IGEM has been advised that, while the regional DMO plan has been provided to disaster management groups for review, the plan could better reflect current arrangements.

The regional DMO plan also states that each region will have a Wildfire Response Plan. While the regional DMO plan includes a range of action plans for different hazards and situations, a specific plan for responding to wildfire is not amongst them. IGEM was advised by QPWS of incident triggers and actions for wildfire specific to K'gari in an appendix to the plan, and that this is deemed as the Wildfire Response Plan.

Figure 8 below is included in the QPWS Coastal and Islands Region Disaster Management Operational Plan.⁸⁸ It describes the interactions between the QPWS disaster and fire management planning framework and the Queensland disaster management arrangements. IGEM notes that, under this framework, QPWS Wildfire Response Plans are listed as threat specific plans that sit alongside the regional emergency and disaster plans.

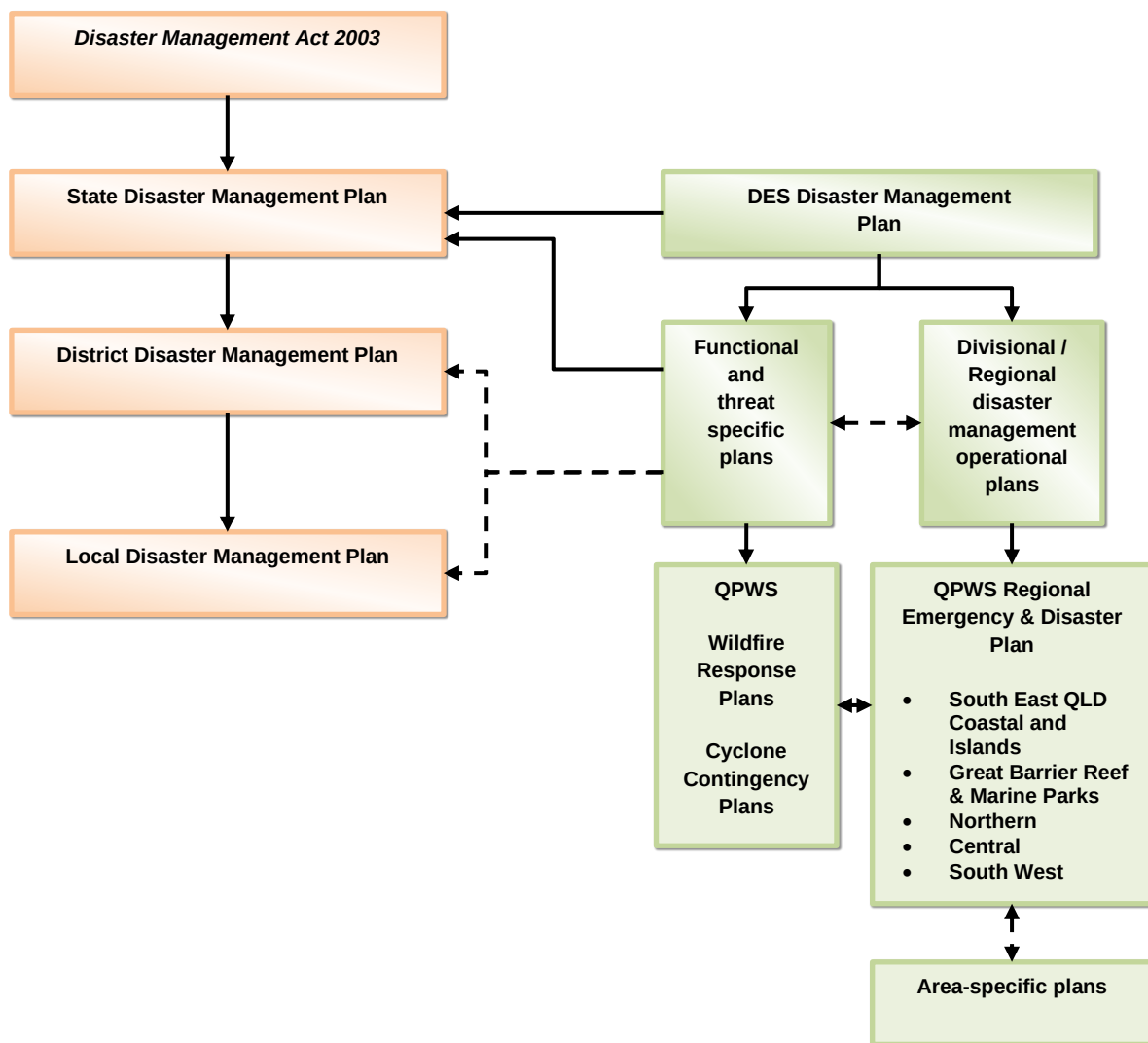


Figure 8: Disaster Management Framework (Source: QPWS Coastal and Islands Region Disaster Management Operational Plan)

Recommendation 18

The Inspector-General Emergency Management recommends the Department of Environment and Science ensure that all Queensland Parks and Wildlife Service regions develop a Disaster Management Operations Plan based on a standardised format. The plans should include provision for annual review to ensure they remain contemporary, interoperable with relevant disaster management plans and aligned to the *Department of Environment and Science Emergency Management Plan*.

Recommendation 19

The Inspector-General Emergency Management recommends the Department of Environment and Science develop and implement a Wildfire Response Plan for Queensland Parks and Wildlife Service Coastal and Islands Region, to be included in the region's *Disaster Management Operations Plan*.

Situational reporting

The QBP identifies the requirements for reporting to provide decision makers at multiple levels with real time situational awareness to enable effective decision making. The QSDMP reflects a similar high-level description of how situational reporting during disaster events flows from the local level through the districts to the state to create a common operating picture. IGEM heard that the flow of reporting across levels may not be as well-practised within QPWS as within the disaster management system. While a Regional Coordination Centre was activated during the event, IGEM was advised that situational reporting did not flow through this centre to the state level. IGEM is advised QPWS is currently undertaking a review of its protocols and procedures at regional and state levels, which includes situational reporting. IGEM also notes that the QBP advice on reporting could better explain the reporting requirements for other fire management agencies when controlling an incident.

QPWS has situational and other information reporting templates outlined in its Fire Operations Command System (FOCS). The system details how incident management should be practised within QPWS, including detailed templates for incident action planning, reporting and briefing. IGEM heard that capacity and resourcing of the incident management team during this event may have limited the ability to undertake some incident management functions, including reporting, in the most effective manner. Situational reporting by QPWS did not follow a standard structure or process, and different methods were used as the event unfolded. Some reports were recorded in the QPWS FLAME system, others were recorded on emails. Both seem to have been distributed to a limited audience that was intermittent in including some of the key stakeholder agencies.

The K'gari bushfire was under the control of QPWS for approximately six weeks. IGEM heard from stakeholders of the commitment and ability of QPWS staff dealing with high tempo critical issues and equally high workloads, sometimes with limited supporting resources. However, IGEM also notes the concerns expressed by stakeholders, including affected communities, about the lack of structured, relevant and timely information being distributed during this period. This could be improved by ensuring adequate resources are available to support QPWS incident management functions, including structured, comprehensive and timely situation reports. IGEM notes that QPWS can request assistance from other emergency management agencies to achieve this, and this should be supported by those agencies.

Recommendation 20

The Inspector-General Emergency Management recommends the arrangements and requirements for situational reporting when an incident is under the control of the Department of Environment and Science be detailed in the *Queensland Bushfire Plan*. These arrangements should also be outlined in relevant joint entity agreements and operational doctrine.

Recommendation 21

The Inspector-General Emergency Management recommends the Department of Environment and Science review the resourcing model to ensure surge capacity is available to support incident management functions during response operations. This includes processes to request assistance from other departments and entities with responsibilities for fire and incident management.

Recommendation 22

The Inspector-General Emergency Management recommends the Department of Environment and Science review its suite of operational doctrine to ensure arrangements for situational reporting and requests for assistance are aligned to recognised multi-agency practices used in disaster management.

Incident level

The QBP (at 5.2.2) identifies QPWS is responsible for responding to bushfires on land it manages and for maintaining a firefighting capability for this purpose. AIMS identifies three incident levels, which are applied in the QBP to bushfires on QPWS managed land as follows:

- Level 1 incidents will be managed QPWS
- Level 2 incidents will be managed by QPWS unless human life or property is threatened, or the bushfire is likely to progress beyond QPWS managed land. In these cases, responsibility for the bushfire will be transferred to QFES.
- Level 3 incidents will be controlled by QFES.

Current descriptions for Level 1, 2 and 3 incidents are outlined on page 46 of the QBP and shown in Figure 9 of this report which shows the potential characteristics and likely actions for each level of incident.

For level 2 and 3 incidents transferred to QFES, QPWS will continue to contribute to the IMT in order to maintain an effective response. The determination of incident level is a primary task for the Incident Controller.

QPWS initially categorised the K'gari fire as a Level 1 incident, in line with recognised practice of both agencies. The timeline of events provided by QPWS indicates the fire was moved to a Level 2 incident on 31 October.

INCIDENT LEVEL	CHARACTERISTICS AND ACTIONS
Level 1	A level 1 bushfire is able to be resolved through the use of local or initial resources, generally small in size, of short duration and poses minimal threat and impact to the general community. Incident management is undertaken by the first arriving crew.
Level 2	A level 2 bushfire is one which exceeds the capacity of the local area to respond and requires wider support for sustained operations. The duration of the fire may be several days or of a significant complexity due to its proximity to population or critical risks. - Incident management team is established within Level 2, Incident Control Centre (ICC), comprising QFES and other stakeholders. - Regional Operations Centre (ROC) established - Multi-agency response likely.
Level 3	A level 3 bushfire is one which exceeds the capacity of the local area to respond and requires significant support. There is the potential for multiple loss of life, significant impairment to infrastructure and significant disruption to the economy. The duration of the fire may be for several days or weeks and requires a high concentration of resources. - Incident management team established within suitable Level 3 ICC comprising QFES and other stakeholders - Full multi-agency involvement - SDCC activation - Disaster Management arrangements activated

Figure 9: Queensland Bushfire Plan incident levels (Source: QFES, Queensland Bushfire Plan)

IGEM notes these considerations are primarily relevant for a fire that is being controlled by QFES and could better describe arrangements when a land manager is in control of the fire as a Level 2 incident especially for environmentally significant or World Heritage listed sites.

Both QPWS and QFES also have documented internal criteria for the level of an incident which apply when their agency is the role of Incident Controller. QPWS levels are outlined in its FOCS. QFES has Operations Directives in place for each level of incident classification. IGEM has found there is some inconsistency between the two agencies in identifying the criteria, situations and potential circumstances that will be in place for each level. While the criteria double as triggers for moving between the levels and identifying when a handover is indicated, it is not clear which criteria, or which combination of criteria, have primacy when determining these movements. This is particularly relevant for a level 2 incident, where there is no clear delineation of when a handover from a land manager to QFES should occur.

Level 2 incidents are more complex than Level 1 either in complexity, size, resources or risk. They are generally characterised by the need for additional resources, sectorisation of the incident, involvement of multiple departments, an expansion of the IMT or a combination of these. QPWS examples of level 1 incidents are regular planned burns, while Level 2 incidents could be a wildfire or a marine stranding.

QFES also identifies that level 2 incidents may require specialised resources, there may be state media coverage and a potential for loss of life, failure or impairment to business or utilities, reduced services and environmental recovery. The timeframe provided for a QFES level 2 incident is up to five days.

QPWS records indicate the fire was escalated to level 2 incident on 31 October, or day 18 of the response. It remained as a level 2 for the remainder of the response, including during the transfer of control to QFES and operations undertaken until the handback to QPWS on 13 December 2020.

If the standard of risk to persons, property and the environment is used as a basis, each was evident during the K'gari incident. Defensive burns were conducted to protect communities and properties at risk, evacuations occurred and widespread damage to the environment was apparent. IGEM also notes the extended timeframe and international media coverage of this event. The unique ecosystems and environment of K'gari means that the environmental protection factor outlined in the FES Act could also have been more rigorously applied.

For clarity in respect to transfer of control, there should be a clear and agreed understanding between QPWS and QFES as to when human life and or property is under threat to trigger the transfer. In respect to the environment this is addressed under World Heritage and Recommendation 1 earlier in this review.

Recommendation 23

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services and the Department of Environment and Science review the current description of Level 1, 2, and 3 bushfire incidents and the implied meaning of property in the *Queensland Bushfire Plan*. This review should identify and agree on clear criteria and decision points for the transfer of control and develop a standard process and templates.

Evacuation planning

The QBP identifies that local government, through the LDMG, is responsible for developing evacuation plans, which are a sub-plan to the Local Disaster Management Plan (LDMP).⁸⁹ The QBP further states that the location of evacuation centres and places of refuge should be outlined in the evacuation plans developed by the local government.⁹⁰

The response section of the QBP identifies the three types of evacuations: self-evacuation, voluntary evacuation and directed evacuation.⁹¹ The options for evacuations during emergencies or disasters fall under three pieces of legislation:

- the DM Act when a disaster situation has been declared under that Act
- the *Public Safety Preservation Act 1986* (PSPA) when an emergency situation has been declared under that Act
- the FES Act where no disaster or emergency situation has been declared under either of the previous Acts.⁹²

IGEM was advised that a disaster declaration was not required for this event, as additional powers were not required. The disaster management arrangements were not activated, and the Fraser Coast LDMG did not move to Stand Up for response operations. The LDMG provided a Liaison Officer to the QPWS ICC however this was some time into the response when the incident was being managed from Rainbow Beach, due to communications issues.

An emergency situation was declared under the PSPA for Cathedral Beach at 12.25pm on Saturday 14 November 2020 and revoked at 1.30pm on Sunday 15 November 2020. Stakeholder information provided to IGEM advised that location was subject to advice over a

number of days which promoted voluntary evacuations. While the evacuations were of a relatively small scale, they were disruptive to the community that was there, and required significant last-minute planning and actions to ensure safety and alternative accommodations.

The Fraser Coast LDMG has a specific evacuation plan for K'gari, however this is primarily a plan to evacuate the whole island in circumstances of a Category 3 or above cyclone. The action checklist associated with this plan is comprehensive and covers considerations and actions with regards the decision to evacuate, resources, warnings, and the withdrawal, shelter and return phases of the evacuation.

There is opportunity to support Fraser Coast Regional Council in identifying suitable evacuation strategies for bushfire and how they will apply to specific communities in different circumstances. Key to this will be the Locality Specific Area Fire Management Group. The Gympie Regional Council should also be consulted as, according to QPWS, high numbers of vehicles and visitors arrive onto K'gari via Rainbow Beach.

Any planning for evacuations would also need to consider the strategies and actions undertaken by QPWS to monitor and maintain oversight of the number of visitors on the island. The planning should include all members of the LSFMG and should ensure that tourism operators and businesses on the island are consulted, that they understand how the plan will apply to them, and any required actions if the plan is activated.

Recommendation 24

The Inspector-General Emergency Management recommends the Maryborough District Disaster Management Group works with the Fraser Coast Local Disaster Management Group to plan for the evacuation of K'gari due to bushfire. Once developed, the plan should be exercised and regularly reviewed.

Intelligence and predictive services

The 2018 Queensland Bushfires Review (the 2018 Review) highlighted the importance of intelligence and technology for bushfire planning, mitigation and response activities and the sharing of information. The review also showcased the role of the QFES Predictive Services Unit and Fire Behaviour Analysts (FBAs), and the tools at their disposal to produce products to inform decision makers.

The QBP describes the FBA role during bushfire response to provide short-term outlooks including fire behaviour predictions.⁹³ The QBP does not currently identify a role for FBAs as part of prevention and mitigation programs. Stakeholders have identified opportunities in this area, for FBAs to support bushfire mitigation through improved collaboration on fuel load and vegetation mapping. This could include leveraging off existing capabilities within the RFS and QPWS to ensure they are appropriately informed, and where required trained in the equipment needed to provide data that is fit for purpose. IGEM acknowledges recent engagement between QFES FBAs and Butchulla people on the island to examine vegetation types to assist in refining the accuracy of inputs for future predictive products for K'gari.

Recommendation 25

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services examines the use of predictive service capability to inform prevention and preparedness in addition to response activities.

During the K'gari bushfire, QFES has advised that FBAn-produced predictive products were provided to incident management teams across the life cycle of the event. IGEM is aware that FBAns worked collaboratively from within the incident management team while the incident was under the control of both QPWS and QFES. The products developed included weather forecast information, fire behaviour estimates and fire spread predictions. Predictive services products rely on accurate inputs, such as the precise location and time of the fire, weather forecast information, fuel loads and fuel structure.⁹⁴

IGEM heard from several sources about the challenges with weather forecasting on sand islands such as K'gari. IGEM also heard about the challenges with input information for fuel load and fuel structure for the island affecting the accuracy of fire simulations. More accurate information and data about fuel load and fuel structures would improve this. The provision of this information can be leveraged through partnerships with land managers and other stakeholders during response, as well as prevention and mitigation. A proactive year-round approach would ensure existing data is as accurate as possible, thereby increasing product accuracy and timeliness when a fire occurs.

Recommendation 26

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services engages with land managers and other stakeholders on K'gari to source data to inform predictive services products.

The 2018 Review identified that the capability of people to read and interpret predictive services products should be investigated and considered. QFES has since advised its preference that products not be directly supplied to stakeholders. Rather, that because of the technical nature of the products they should be supplied only through QFES liaison officers.

During the K'gari incident, IGEM heard instances of agencies relying on predictive services products to make operational decisions. While the products are one piece of information that decision makers may consider, they should not be used in isolation. It is vital that QFES continues to develop a strong understanding amongst stakeholders about the products available to them and how they can best be used. This will help to ensure agencies are making the best use of these products in decision making.

Recommendation 27

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services identifies stakeholders that would benefit from predictive services products. Suitable advice and training should be provided to these stakeholders to assist with using and interpreting the products.

IGEM understands Queensland's accredited FBAns are often deployed to other states, as well as internationally, and are well respected. Given the importance placed on predictive intelligence by stakeholders, and future indications of more severe fire weather, a strengthening of FBAn capability should be a strategic priority for QFES.

Good Practice Example – NSW Rural Fire Service – Predictive Services Unit

The NSW Rural Fire Service (RFS) has 25 accredited FBAns, with four being regionally based. NSW RFS is undergoing a restructure, with its regions increasing from four to seven. Plans are underway to provide one fulltime FBAn resource for each region, supported by a central group of staff within the Predictive Services Unit (PSU). During bushfire incidents, regional FBAns are deployed to support the incident management team, once established. The provision of products during major incidents that exceed the capacity of a single regional resource are managed through the PSU. The regional officers then convert to liaison officers, providing advice about the products and a feedback conduit back to the PSU to improve accuracy and ensure products remain fit for purpose.

Backburning operations

A backburn is defined as ‘a fire started intentionally along the inner edge of a fireline during indirect attack operations to consume fuel in the path of a bushfire.’⁹⁵ QFES has advised that putting fire into the landscape can be an effective strategy in containing bushfires and minimising the risk to life, or impact to property and assets. However, it also has inherent risks that must be considered. The agency noted the goal is always to have as little fire on the ground as possible in high risk and challenging conditions. For this reason, and in line with QFES’ tactical directive, the agency advised that all backburning operations require a thorough options analysis and a well-determined plan to be authorised by the appropriate responsible Incident Controller.

During the review, IGEM received representations from several stakeholders about their perceptions of backburning operations. Some stakeholders felt there were delayed or missed opportunities to backburn early in the initial firefighting response and there is a need to limit the impact of delays caused by executive approval processes within agencies. Stakeholders have outlined what they believe to be a recent practice of requiring remote, high level approvals for backburning operations to proceed, and these approvals at times override or dictate decisions of the locally based Incident Controllers. It was noted this can influence the chain of command at the incident level and can result in a delayed decision, or a backburn not being proposed due to the approval complexities.

An example of this was a proposed backburn at Orchid Beach, where there were conflicting views between agencies on whether conditions were suitable for a burn to take place based on a three-day outlook. Following discussions between agencies about the prevailing weather conditions, a burn plan was later developed and the backburn was completed some days later. Another example provided to the review related to a backburning operation at Happy Valley where air operations had to leave the fire. In a multi-agency environment, there is a need to coordinate air and ground operations to ensure the safety of all personnel on the fire ground.

A suggestion raised by stakeholders was the perceived benefits in transitioning to late afternoon and evening and ‘cool burns’ for backburns as the temperature and wind drops, humidity increases, and it is easier to identify spot over incidents. As previously mentioned in this report, consideration of traditional burning practices can also inform safe and effective backburning. Stakeholders suggested there may be current limitations in QPWS industrial arrangements to allow for ‘cool burns’ to be undertaken at night. This could be considered and discussed further by DES with their staff and industrial representatives.

Aerial Operations

Aerial firefighting assets are becoming a more integral part of firefighting in Australia, with their use during the 2019-2020 fire season unprecedented.⁹⁶ QFES advises it engaged 30 different types of aircraft throughout the K'gari fire event including Large Air Tankers (LATs), exceeding previous events by dropping over 13.3 million litres. QFES had access to ten National Aerial Firefighting Centre (NAFC) contracted aircraft in addition to the 183 aircraft available through their standing offer arrangement.

The effectiveness of waterbombing is dictated by prevailing weather conditions, smoke presence, assets under risk and vegetation and soil types. As the world's largest sand island, K'gari presented unique challenges for aerial operations. Firefighting personnel reported that waterbombing loads would drain into the sand and soil quickly, reducing the ability to retain surface moisture to assist ground crews. QPWS advises that water bombing may not be as effective in extinguishing bushfires in forests or other heavily vegetated environment such as K'gari where it may be difficult to penetrate heavy foliage and canopies with waterbombing loads. Further, that waterbombing is most effective when used to complement on ground firefighting activities. QFES also advised that aircraft alone cannot extinguish fires and they are used as part of a suite of response capabilities. QFES further advised that the effectiveness of gel additive to waterbombing operators is dictated by the environmental and vegetation conditions, with varying success dependent on hot and dry conditions or cured vegetation types.

The LAT is a suppressant delivery aircraft, supported by specialised air and ground crews. QFES contracted a LAT through the NAFC from Canada for an 84-day period from 1 September 2020. LAT flight crews are subject to the Civil Aviation Safety Authority's fatigue management requirements, which includes mandatory rest periods.⁹⁷ IGEM is advised for this event, a mandatory rest period coincided with the K'gari event from 24 November through to 28 November 2020, which covered the handover of control from QPWS to QFES.⁹⁸ Due to continued heightened fire conditions the LAT contract was extended by QFES for an additional 21 days from 29 November through to 19 December 2020. A LAT from the New South Wales Rural Fire Service also arrived in Bundaberg and undertook aerial operations over K'gari with the Queensland LAT on 7 December 2020.

During the K'gari event, QFES utilised a mix of smaller fixed wing aircraft in the prevailing conditions. The sectorisation of the airspace minimised safety risks associated with low-level flying and maximised effective use of assets. During the event, aircraft were used to 'steer' the direction of the fire to protect cultural heritage sites, support firefighters on the ground by extinguishing spot overs, and help maintain emergency vehicle access along containment lines. Aircraft were also used to monitor through linescan, Forward Looking Infrared and visual observations and extinguish hot spots in remote locations.

QPWS has existing arrangements for the use of aircraft for preparedness activities to deploy aerial incendiary devices for planned burns. However, the QPWS arrangements are not as established and pre-qualified as the QFES arrangements during response. IGEM has been advised that water bombing aircraft were first used on 9 November 2020. Due to the weather conditions, opportunities to conduct defensive burns with aerial support were limited and therefore required swift decision making and approvals. During the event, IGEM heard of some delays with QPWS approvals for the use of aircraft for waterbombing operations, with conditions changing before operations could be undertaken. Responsible QPWS officers were also unclear about the application of the pre-approved procedural guide for the use of bushfire

agents on K'gari. The benefits of joint planning between QPWS and QFES about the use of aerial assets on QPWS managed land is discussed in the Interagency arrangements section of this report.

Greater national aerial capability has assisted QFES in accessing different and more effective aircraft types such as fixed-wing scooping water bombers. However, the greater access to suitable assets coincides with increasing aircraft costs. Despite increased use, there is limited public understanding of the primary use of air assets, which is to support ground-based fire attack techniques and to gather observations and intelligence about fires. The Queensland community would gain a better understanding of the use of aerial assets if public education and awareness information was made available and promoted prior to bushfire season and during fire events.

Recommendation 28

The Inspector-General Emergency Management recommends a public information resource be developed by Queensland Fire and Emergency Services to inform the community and stakeholders about aerial assets utilised in bushfire response.

Innovative technology

Further consideration of the use of new aerial operations technology, remote piloted systems and early detection satellites and camera networks could enhance Queensland's response bushfires. The Final Report of the 2019-20 NSW Bushfire Inquiry identified that helicopters, LATs and drones were used to great effect in support of aerial intelligence and fire suppression.⁹⁹ The report also identified that Fire and Rescue NSW has 15 drones ranging in size and sensor capability. During the 2019-20 NSW fires, 50 missions were flown using drones. Drone technology was used by NSW National Parks and Wildlife Services and NSW Forestry Corporation NSW.¹⁰⁰ IGEM notes QFES has recently trialled the use of Remotely Piloted Aircraft and DES has also advised it utilises this technology along with early detection cameras and satellites. Firefighting operations in Queensland could benefit from further utilisation of this technology to support intelligence gathering. The flying of remote piloted systems is regulated by the Civil Aviation Safety Authority (CASA), there are restrictions associated with flying such systems for members of the public, which includes flying in areas where emergency services operations are underway as this presents an unacceptable risk.

Good practice example - Early detection technology

Early detection technology is being utilised in locations overseas such as California to detect, track and respond to bushfires.

Companies are trialling the use of artificial technology, satellites, cameras and ground sensors to detect fires, track fire growth and report a bushfire to land managers and bushfire response agencies.

Ongoing consideration of how early detection technology could be utilised in Queensland.

Transition of control

On 27 November, discussions between QFES and QPWS at incident management and executive levels considered fire behaviour predictions, conditions, deployed assets, incident control and potential closure of the island. Predictive products identified that Kingfisher Bay Resort was under potential threat.

IGEM has been advised that representations were made from the QPWS-led incident management team to consider the fire a Level 3 incident. This was not considered necessary by QFES. Subsequently QFES declared the incident a Level 2 incident and transitioned to take control of the incident. The transition was supported due to the escalating potential threat to life and property, in particular to Kingfisher Bay Resort. QPWS retained Deputy Incident Controller status and continued to provide advice and support to the response.

QFES conducted a risk assessment, and as a result of discussions with QPWS, determined that access to the island should be restricted to residents and essential service providers only, that some inland tracks be closed for safety reasons and to ensure continued access by emergency service vehicles. IGEM notes at this time visitors already on the island were permitted to remain. Work continued to strengthen control lines and prepare for evacuations around Kingfisher Bay and Happy Valley. The Happy Valley community was successfully defended.

IGEM heard positive feedback from response agencies about the role played by business operators in assisting the overall firefighting response. In particular, the contribution of Kingfisher Bay Resort and Village, Sealink and the company's General Manager in working with response agencies to facilitate barge access to the island, accommodate firefighting and support personnel and sharing information using their social media channels to get the message out was very well regarded by many stakeholders. The General Manager advised Kingfisher Bay Resort and Eurong Beach Resort were also voluntarily closed to guests from 30 November to 19 December 2020 but remained open to accommodate and provide meals to approximately 60 response agency personnel.

It is acknowledged that there was significant firefighting commitment by QFES, QPWS, Butchulla people and the community. At the height of the event over 100 QFES personnel, 13 QPWS units were deployed with three aerial observation aircraft, two helicopter water bombers, ten water bombing aircraft and the Queensland and New South Wales LATs deployed dropping over 1.5 million litres of water in a day. The firefighting operation was supported by the Butchulla people, RFB crews and the community. The firefighting effort was aided by storm activity in the late evening on 7 December 2020, with 26mm of rain falling on the fire ground. Conditions started to ease from the 8 December 2020 with crews reporting very little active fire and were undertaking blackening out activities and patrolling hotspots.

On 9 December discussions commenced between QPWS, QFES and BAC about the staged re-opening of the island. Response activities continued until 14 December, with the fire under control and handed back to QPWS at midday due to a significant easing of conditions and confidence in containment lines. The Incident Management Team was relocated to the QPWS office in Maryborough and the focus of the operation moved to recovery. DES media advised that access restrictions would be lifted from Tuesday 15 December, and that locations would be reopened progressively as hazard assessments and essential works were completed.

IGEM noted strong stakeholder commentary about the marked increase in personnel, resources, aerial assets and public information once the fire was transferred to QFES control.

PUBLIC

For the hand back to QPWS, QFES developed a transition document to ensure the incoming QPWS Incident Controller was aware of the current situation, the basis for transfer and expected future management requirements. This was supported by a SMEACS briefing, incident safety plan and risk assessments for each division. IGEM is not aware of a similar process in place for QPWS, however is aware that a SMEACS brief and Incident Action Plan were provided on the morning of 27 November 2020. There is benefit in both agencies having a standard process for transition that clearly identifies the basis for transfer and future management considerations. IGEM notes the capacity issues for QPWS identified previously within this report, which may have limited the ability to provide such detailed information and plans.

Community engagement

Public engagement

According to the QSDMP and the QBP, community and public engagement activities are a shared responsibility that should be conducted in coordinated approach between local, district and state groups, and state agencies. The QBR goes on to state that engagement activities and public messaging must be coordinated with QFES as the primary agency for bushfire, and a priority of community engagement is the communication of bushfire risk to Queensland communities. It states that AFMGs coordinate and deliver community engagement programs to increase community awareness about bushfire, and to prepare communities for bushfire by disseminating information about bushfire prevention and risk reduction strategies.¹⁰¹

Public engagement during preparedness

The community felt there was a lack of public engagement in the preparedness for the K'gari bushfire event. Residents felt there was a lack of coordination between agencies responsible for bushfire mitigation and fire management on K'gari. Many stakeholders described a lack of engagement with the community regarding planned bushfire mitigation activities. However, it is noted that Fraser Coast Regional Council has sought to address these issues in recent times with the Community Consultative Committees established on the island.

Community associations

IGEM recognises the outstanding efforts of residents and property owners in the townships in Orchid Beach, Eurong, Happy Valley and Kingfisher who organised themselves through community and progress associations to bring their communities closer together. IGEM also recognises the support provided to these community groups from the Fraser Coast Regional Council. IGEM encourages QFES and QPWS to consider adopting a mechanism to better engage with the communities on the island, particularly during preparedness and mitigation activities. Reinvigorating the LSFMG on K'gari would be an ideal mechanism to achieve greater public engagement. The DM Standard recognises that public engagement is most effective when engagement activities are two-way. The LSFMG could act as a forum for agencies to discuss their mitigation activities and listen to community feedback about their concerns and priorities.

Public engagement in bushfire risk mitigation planning

IGEM reviewed the Fraser Coast AFMG's 2020 Bushfire Risk Mitigation Plan for April to October 2020 to determine the level of public engagement activities planned and undertaken for the bushfire season. Public engagement activities did not feature in the plan. Fraser Coast AFMG's 2020 Bushfire Risk Mitigation Plan could benefit from the inclusion of planned engagement activities in the plan itself or a relevant Community Engagement Sub Plan.

Recommendation 29

The Inspector-General Emergency Management recommends the membership of the K'gari Locality Specific Fire Management Group be expanded to include representatives of the Butchulla people, community associations from each township and tourism and business operators with interests on the island.

Recommendation 30

The Inspector-General Emergency Management recommends the Bushfire Risk Mitigation Plan for Fraser Coast Area Fire Management Group include a schedule of planned engagement activities, or a community engagement sub-plan outlining these activities, and be publicly available.

K'gari Bushfire Community Meetings

Two joint QPWS and QFES community meetings were held early in the bushfire response on 19 and 20 October 2020 at Orchid Beach to discuss backburning operations. Operational records indicate further community meetings did not occur again until 16 November 2020 at Happy Valley. It is noted a further community meeting was held a week later on 24 November at Happy Valley with around 90 people in attendance. Additional community meetings were hosted by QFES on 1 December for residents in the Eastern Division, on 6 December at Eurong Resort, 8 and 9 December in Happy Valley, and 11 December in Eurong. IGEM notes that the absence of a month without direct public information flow to the community may have exacerbated the concerns raised about lack of public information flow from response agencies during the initial phase of the fire. Further community engagement and public information planning by agencies would be welcomed by the community to enhance the information flow during bushfire responses.

Restricting access to K'gari

On 27 November 2020, QFES in consultation with QPWS announced via a joint media release at 3:35pm that "new campers and visitors will be unable to access K'gari (Fraser Island) from 5pm today, as fire conditions are expected to worsen over the weekend.... only residents and people providing essential services will be able to move between the mainland and the island." QFES advised the restrictions were made due to safety concerns and to decrease traffic to ensure emergency vehicles retained access along easily congested and narrow sand tracks.

QFES advised the decision to restrict access to the island for visitors was broadcast through the media and online, with QPWS undertaking direct communications with commercial operators (see Appendix B). DES has advised it sent email notifications about the visitor restrictions to commercial tour and visitor permit holders at 5pm on 27 November, stating the closure was due to erratic and difficult conditions expected in coming days. Not all commercial operators with interest in the island received this notification from DES. Public information about the visitor restrictions were also issued by the QPWS Park Alert system and DES website. Many commercial operators indicated they heard the news via social media or media reports.

Some property and business owners also felt more a targeted and location-based approach to the visitor restrictions to the island could have allowed areas not under threat to remain open to visitors. The example provided to IGEM was from accommodation and business operators in Orchid Beach who queried the whole of island restriction when they believed the threat to their township had passed some weeks earlier. IGEM notes this is an operational decision for the Incident Controller in consultation with QPWS based on the risk and safety concerns at the time.

Responsibilities for planning and processes to communicate restricting access to K'gari is unclear. It would be beneficial if a joint communication plan is prepared to enable a coordinated approach, clarify roles and responsibilities, identify the most suitable communication channels and key contact points to broaden message reach. Consulting

residents and tourism operators about the draft communication sub-plan would be good practice. Exercising this plan would also be beneficial to ensure it will be understood by all agencies and the community.

Recommendation 31

The Inspector-General Emergency Management recommends the Maryborough District Disaster Management Group works with the Fraser Coast Local Disaster Management Group to prepare and exercise a communications sub-plan with all responsible agencies to clarify the roles, responsibilities and communications channels used for restricting access to K'gari.

Visitor management

QPWS estimates visitors to K'gari in excess of 300,000 per year, noting consistent visitation generates the primary income source for commercial tourism operators. A Fraser Island Sustainable Visitor Capacity Study conducted in 2008 recommended management actions to achieve long-term sustainability of tourism and ensure K'gari's world heritage values are protected. The 2020 IUCN Outlook for K'gari identified that accurate visitor numbers are critical to effective management. The Outlook identified "... a need for up to date consistently collected data on the number of visitor arrivals on Fraser Island (K'gari) as this data is critical for effective decision-making and management outcomes".¹⁰² From a disaster management perspective, the ability to monitor visitor numbers and movements, is critical to effective evacuation planning.

QPWS issues permits for vehicle access to K'gari and camping under the RAM Act. These arrangements require contact details of the permit holder to be registered. In the case of camping permits, the person making the booking must also register the number of campers but not their contact details. Under current arrangements, permits may be purchased through multiple means including online, by phone or by visiting an over-the-counter booking office or self-service kiosk.¹⁰³ The QPWS camping booking system allows park managers to set and manage camping area visitor capacities.¹⁰⁴ However, IGEM has been advised that a significant number of visitors access the island without the need to book through QPWS. This includes persons entering the island directly through private accommodation providers.

There is currently no means for QPWS to ascertain the daily number of visitors to K'gari. The permitting system currently requires only the permit holder to register. The system does not require details of all parties accessing the island under that permit. This creates challenges in fully ascertaining the numbers and location of people on the island. QPWS representatives advised that during the firefighting response QPWS and QPS representatives were required to drive from campsite to campsite to provide updates on the fire and conditions, to relocate campers or to advise of restrictions. Better use of technology such as Automatic Number Plate Recognition technology and other solutions to register people onto and off the island should be further examined to improve the responsiveness of issuing warnings to the public. IGEM recognises that QPWS deploys Automatic Number Plate Recognition technology at other locations and its use could be expanded to K'gari. Drawing upon the work already undertaken by the Queensland Government in the response to COVID-19 to implement the Check in Qld App, technology solutions like this could also be applied across the island to check in visitors in QPWS campsites and private accommodation providers. Poor mobile phone and internet connectivity on the island would need to be considered further, acknowledging these matters are in the Commonwealth Government jurisdiction.

Stakeholders have expressed concerns about K'gari's visitor management and the improvements required to ensure it is best suited to managing a World Heritage site. Clarity about the status of the Fraser Island Sustainable Visitor Capacity Study for K'gari and any consideration of actions to monitor daily visitor numbers, would be beneficial.

Good Practice Example – Check In Qld app

The Queensland Government's response to the COVID-19 pandemic has shown the public is willing to comply with checking in requirements by using simple technology. The Check In Qld app provides a contactless, free, secure and convenient way for customers to sign in to hospitality businesses in Queensland. It allows check in without having to enter details multiple times, simplifies compliance and uses a simple QR code. This could be expanded for further uses to check in visitors to the island.¹⁰⁵

Recommendation 32

The Inspector-General Emergency Management recommends the Department of Environment and Science examines the utilisation of technology, in consultation with relevant stakeholders, to improve the collection of visitor numbers and movement data. This could include, for example, expanding the use of Automatic Number Plate Recognition technology to K'gari and examining suitability of mobile phone check-in applications.

Fire compliance and signage

Compliance to deter and detect illegal fires on K'gari is an important role in preventing bushfires. Compliance is part of a ranger's duties and are authorised under a variety of legislative mechanisms, including the RAM Act, the NC Act.^{106 107} The duties include education, compliance and enforcement actions. From July 2018 to December 2020, 170 fire-specific incidents on K'gari led to reportable offences which resulted in the issuing of 86 Penalty Infringement Notices. QPWS advises the Butchulla Land and Sea Rangers are also soon to be authorised to perform compliance duties. The QPWS K'gari Compliance Strategy targets different categories of offences and location hotspots over a 12-month period. It acknowledges the high level of visitor management activity necessitates the need for legislative and policy-based rules and regulations. It acknowledges that fire offences often occur when rangers are not on duty, resulting in a low risk of being detected.

Participants at community forums felt stronger compliance regimes are needed on K'gari to deter illegal campfires. IGEM notes there is limited fire compliance signage at embarkation and arrival points, and fire prohibition messaging on K'gari is problematic as there are locations where campfires are currently permitted on the island at Dundabara and Waddy Point. IGEM also understands permits are issued to small business owners in the Rainbow Beach area to sell to firewood to visitors which can include people travelling onto K'gari.

This creates public confusion regarding the prohibition of campfires on the island. A clear and consistent public message from QPWS on campfires, supported by a community awareness campaign could help to address this confusion. Such an approach would need to consider the experience of visitors to the island lighting campfires on K'gari over a number of years and undertake an approach that encourages behavioural change. Encouraging QPWS rangers and BAC Land and Sea Rangers to undertake proactive campsite visits and awareness discussions with the public could help to reinforce this message. A review of all signage, maps and permit information given to visitors would also be beneficial to ensure consistency of information about campfires on the island. This review does not relate to cultural heritage and burning practices of the Butchulla people on K'gari.

Recommendation 33

The Inspector-General Emergency Management recommends the Department of Environment and Science implements the proposed treatments for fire identified in the Queensland Parks and Wildlife Service *K'gari Compliance Strategy*.

Recommendation 34

The Inspector-General Emergency Management recommends the Department of Environment and Science undertake a review of campfire locations on K'gari, including all relevant signage on and off the island, maps and visitor permit information, to promote a consistent message about lighting campfires on K'gari.

Recommendation 35

The Inspector-General Emergency Management recommends Department of Environment and Science implement an awareness and engagement strategy aimed at deterring the lighting of campfires to encourage behavioural change amongst visitors.

My advice to visitors who are considering camping in national parks is that 'your backyard does not end at your mailbox. All of Australia, including our national parks, is our backyard and it's up to all of us to look after our country.'

Boyd Blackman, Butchulla Elder and Park Ranger, Great Sandy National Park
<https://www.des.qld.gov.au/our-department/employment/park-rangers/boyd-blackman>

Communications systems

Effective communication systems are a key element in any bushfire response. Communication systems can include situation reporting and information flow, radio communications and technology, and other communication methods. Regular, accurate and timely situation reporting is vital to ensure all response agencies and key decision makers have the information they need to make decisions and brief accordingly. The QBP states that situation reports must be generated by the IMT and provided to the ICC, ROC and SOC. In the event disaster management arrangements are activated, the ICC, ROC and SOC will provide situation reports to the respective disaster management groups.¹⁰⁸

Representatives at the LDMG and DDMG level have provided feedback about the lack of information flow and situational reporting within the first phase of the bushfire response under QPWS. Agencies have reported to IGEM that information flow to the LDMG and DDMGs improved as QFES became more involved bushfire response. LDMG and DDMG representatives have suggested an opportunity for improvement is for all agencies involved in a bushfire response to coordinate their templates and briefing schedule to ensure operational tempo and situational awareness is provided to all relevant agencies.

K'gari also presents several other unique challenges in maintaining effective communication during a response due to poor mobile phone and internet connection on the island. In a small

number of locations on the island there is limited 3G coverage near townships. However, most of the island experiences large mobile phone and internet black spots. It is noted that telecommunications are a Commonwealth Government responsibility. IGEM understands when QFES took over control of the incident, three Cells on Wheels (COWs) were strategically located on the island to boost mobile phone and internet coverage to support the firefighting operations. COWs were located at Kingfisher Bay, Happy Valley and Eurong which assisted in boosting coverage along the beach.

Stakeholders also advised IGEM of radio communication limitations on the island. QPWS advised the Government Wireless Network (GWN) service area provides coverage to south east Queensland, however this does not extend to K'gari. Radio capability and interoperability is an important part of inter-agency communication during fire response activities. This should continue to be factored into response planning by all agencies.

Warnings

QFES is responsible for developing and distributing bushfire warnings to disaster management stakeholders and the community, in accordance with its obligations under the QSDMP and QBP¹⁰⁹. QFES is also responsible for facilitating and authorising the distribution of Emergency Alert messages to the community.¹¹⁰ A total of 82 Bushfire Community Warnings and one Emergency Alert campaign were issued by QFES between 14 October and 28 December 2020. QFES has advised it issued the first warning for the K'gari bushfire, an Advice Level warning *"Stay informed Fraser Island"* at 2:55pm on 14 October 2020. The warnings were issued by the Warnings Team to QFES social media channels, QFES Newsroom website and media outlets.

Australian Warning System

IGEM understands the three-level Australian Warning System has been implemented in Queensland for bushfire warnings for some years now. The system includes Advice, Watch and Act, and Emergency levels. The three bushfire warning levels have been implemented in Queensland by QFES. The system sets out a consistent approach to natural hazard warnings across all jurisdictions in Australia which now includes newly approved icons to accompany the warning levels.¹¹¹

QFES has advised it adopted the new warning level icons for bushfires from 1 December 2020 which includes yellow, orange and red triangles with an inset flame. Following a review of warning issued, it is unclear if the new icons were used on Bushfire Community Warnings for the K'gari bushfire event from 1 December 2020. QFES' ongoing efforts to embed the new colours and icons with the community could benefit from further rollout of the colours and icons on Bushfire Community Warnings across social media and website platforms.¹¹²

Media Unit operations

Media Units in DES and QFES engaged regularly during the response effort to coordinate messaging across their channels. Community Bushfire Warnings were issued by the Warnings Team in QFES. In the case of the K'gari Bushfire event, Community Bushfire Warnings were issued by the QFES Warnings Team on the request of the Incident Controller, or delegated QPWS and QFES representatives in the ICC. There were also occasions where the Warnings Team proactively engaged with the IMT to propose additional warnings be issue following enquiries from media outlets and social media. QFES also advised a Public Information Officer from the agency was embedded in the IMT and assisted with issuing warnings and coordinating community meetings, in line with IMT roles established under AIIMS.

PUBLIC

IGEM received some feedback from the community about a lack of perceived of proactive public information and media messaging in the initial stages of the bushfire prior to the transition of incident control to QFES. IGEM is of the view that QPWS would benefit from utilising the DES Media Unit to issue proactive public information and media messaging for all significant bushfire events including regular media releases and press conferences with QPWS spokespeople. Consideration should be given to embedding the DES Media Unit within the QPWS ICC to improve public information flow and facilitate media requests in significant bushfire events. Joint press conferences utilising QFES and QPWS representatives should also be considered to deliver more consistent joint messaging.

Good practice example – QFES Media embedded in ICC

QFES Media Unit embedded members of its team in the K'gari bushfire event ICC and North Coast ROC to assist with coordinating media enquiries on the ground and to proactively produce content for social media to keep the community informed. This assisted with facilitating request for media for spokesperson. QFES Media advised 100 per cent of requests for media spokespeople were able to be facilitated by QFES however media requests to go to the island were not able to be facilitated during the restricted access period due to safety concerns. Following the end of the restricted access period, QFES Media deployed its Strategic Content Team to the island to gather video footage and photographs, undertake interviews with RFB volunteers, property owners and residents.

QFES Media also trialled a live media capability, taking live vision from fire appliances on the Island and streamed to the State Operations Centre (SOC) to increase situational awareness of the event. This technology was also used for LAT drops which were beamed live into the SOC. QFES Media was also conscious of capturing positive footage of the island, showing how it was recovering and the tourism areas that remained untouched to assist with promoting tourism. The team tapped into local resources like Kingfisher Bay Resort and shared footage of the day it rained heavily on the island to get that message out on social media.

Lessons management

IGEM notes both QFES and DES have established lessons management programs to inform continuous improvement across their agencies. The DES Disaster Management and Business Resilience Unit (DMBRU) manages the department's lessons management program. The unit conducts the department debriefs following all major events and collates responses to inform the agency's lessons register. IGEM has been advised that QPWS debrief sessions, including feedback from stakeholder agencies, were conducted through an external facilitator in March 2021. QPWS identified in its submission that the fire has strengthened existing relationships and the lessons from the event will better inform future approaches, practices and ongoing arrangements. IGEM has not been advised of any outcomes from the QPWS debriefs.

DES advised opportunities for improvement identified by their agency included training additional staff in logistics. Also, that fireground communication systems and internet connectivity within the ICC were challenging and unreliable. Further, that the fatigue management policies of the agency require review.

QFES identified in its submission that all agencies benefit from further development of multi-agency debriefing and shared learnings from joint operations. QFES held a multi-agency online debrief in December 2020, with a total of 249 observations. QFES' initial learnings identified that the three QFES services had worked cohesively in blended teams. The involvement of the BAC, QPWS and QPWS in the incident coordination centre when controlled by QFES was highly regarded. QFES has identified the collaboration with the BAC during the event as a best practice approach and a key to future firefighting. QFES personnel described the event as providing an opportunity for hands on experience in a team building environment, where they were able to give back to the community. QFES considered that roles were clearly defined, and communications were clear and concise.

QFES identified opportunities for improvement including training additional staff in logistics, improvements to its fatigue management policies, and that fireground communication systems and internet connectivity within the ICC. QFES advised a further formal debrief was to be conducted in January 2021.

QFES identified the early and proactive collaboration between the Happy Valley Community Association, AFMGs, Happy Valley Rural Fire Brigade and other agencies as an example of resilience and community-led risk reduction and planning which would benefit other isolated communities. QFES also showcased its predictive services capabilities and the importance of the FBAns deployed to support the incident management team. This included the ability to adapt systems settings based on local knowledge to allow for unique fuel types, enabling improved accuracy in predictions.

Recommendation 36

The Inspector-General Emergency Management recommends Queensland Fire and Emergency Services and the Department of Environment and Science monitor the progress of relevant improvement activities resulting from the K'gari (Fraser Island) Bushfire Review, through their respective lessons management programs.

Recommendation 37

The Inspector-General Emergency Management recommends should a Queensland Government Action Plan be considered, clarity about the intent of the recommendations be sought from the Inspector-General Emergency Management to assist in informing this process.

Recommendation 38

The Inspector-General Emergency Management recommends this report be returned to the IGEM to monitor, evaluate and report on progress and implementation of the recommendations that are accepted in whole or in part by government.

Appendix A: Review terms of reference

REVIEW TERMS OF REFERENCE

K'GARI (FRASER ISLAND) BUSHFIRE REVIEW

Purpose

Section 16C of the *Disaster Management Act 2003* outlines the following functions for the Office of the Inspector-General Emergency Management, including:

- to regularly review and assess the effectiveness of disaster management by the State, including the State disaster management plan and its implementation;
- to regularly review and assess the effectiveness of disaster management by district groups and local groups, including district and local disaster management plans;
- to regularly review and assess cooperation between entities responsible for disaster management in the State, including whether the disaster management systems and procedures employed by those entities are compatible and consistent;
- to identify opportunities for cooperative partnerships to improve disaster management outcomes;
- to report to, and advise, the Minister about issues relating to the functions above
- to make all necessary inquiries to fulfil the functions above.

In accordance with these functions, for the bushfire event on K'gari (Fraser Island) that occurred from October 2020, the Office of the Inspector-General Emergency Management (the Office) will assess:

- (1) the effectiveness of preparedness activities; and
- (2) the response to the bushfire event

by entities responsible for the management of the island and bushfire and disaster management in Queensland (the Review). The Review should also have regard to the cultural and environmental significance of K'gari as reflected in relevant management plans, and its UNESCO World Heritage listing.

In conducting the Review, the Office will ensure good practice and any opportunities for improvement are highlighted in the report.

Approach

The Office will work closely with Queensland Fire and Emergency Services, the Department of Environment and Science including Queensland Parks and Wildlife Service, Queensland Police Service, local, state and federal agencies, the Butchulla people, and other relevant stakeholders to obtain information necessary to the Review. The Review is to invite submissions from the community.

PUBLIC

The Review should consider the 2018 and 2019 Queensland Bushfires Reviews and consolidate previous observations, insights and recommendations to ensure Queensland Government has the best advice on the capability necessary to effectively prevent and respond to bushfire activity in Queensland.

The Review should also consider any relevant findings and recommendations from the Royal Commission into National Natural Disaster Arrangements.

In conducting the Review, consideration must be given to any impost on front line staff who are responding to the current bushfire season.

Reporting

The Review report will be based on relevant Shared Responsibilities of the Standard for Disaster Management in Queensland.

The report will be provided by 31 March 2021 to the Minister for Police and Corrective Services, and Minister for Fire and Emergency Services.

Before finalising the report, the Office will consult with relevant entities on the draft report, including observations, insights, findings and recommendations.

Appendix B: Media release

3/30/2021

Print Article

Access restricted to K'gari (Fraser Island) as fire continues to impact island

27th November 2020 3:25 PM

New campers and visitors will be unable to access K'gari (Fraser Island) from 5pm today, as fire conditions are expected to worsen over the weekend.

In the interest of public safety, Queensland Fire and Emergency Services (QFES) Commissioner Greg Leach said the last barge to the island for new visitors will depart at 5pm from the mainland, due to the erratic nature and difficult conditions expected in the coming days.

"Our priority is the safety and wellbeing of residents and holidaymakers currently on the island, therefore only residents and people providing essential services will be able to move between the mainland and the island after 5pm today," Mr Leach said.

"The fire is not currently threatening life, property or infrastructure, but it's imperative these types of decisions are made early."

Mr Leach said significant resources were being used to support ongoing firefighting operations, including the use of heavy machinery and water bombing aircraft.

"Several types of water bombing aircraft, including the Large Air Tanker (LAT) are being used to assist ground crews and strengthen containment lines to slow the progress of the blaze.

"It's vital we make strategic decisions, including when and how we use aircraft to support crews.

"The terrain, the vegetation and the weather will always have an impact on these types of operations – we have to be flexible in our approach."

He said residents and visitors currently on the island should remain vigilant and continue to follow the advice of authorities.

"Residents and visitors currently on K'gari (Fraser Island) should stay up-to-date by following QFES on social media, visiting the QFES Newsroom website and tuning into local radio," he said.

"Residents and visitors currently on K'gari (Fraser Island) need to have a plan ready should the fire impact more populated areas such as checking in with their

accommodation providers and visiting the Queensland Parks and Wildlife Service (QPWS) website.”

Deputy Director-General QPWS Ben Klaassen said QPWS rangers, QFES crews and Butchulla representatives are putting in a tremendous effort, despite the fire burning in difficult vegetation and across tough terrain.

“The vegetation type on K’gari (Fraser Island) is coastal heath and is significantly impacting the way the fire burns,” Mr Klaassen said.

“The canopy of the vegetation is thick, and the coastal heath is extremely flammable and resilient to fire activity.”

Mr Klaassen said people on the island may be requested to leave further camping areas or day sites at short notice.

“It’s important campers and residents understand where the closures on the island are and how they impact their movements across the island,” he said.

“The closures are a measured step to assist crews in undertaking important firefighting operations.”

To access the latest updates on the fire situation and closures on the island visit www.qfes.qld.gov.au or www.parks.des.qld.gov.au.

For health advice concerning smoke impacts visit www.health.qld.gov.au.

References

- ¹ Publication of the Creation Story has been approved with permission of the Chair of the Butchulla Aboriginal Corporation Board of Directors
- ² Butchulla Aboriginal Corporation Strategic Plan <https://www.envigorate.com.au/butchulla-aboriginal-corporation-strategic-plan-2020-2030/> accessed 4 March 2021.
- ³ Department of Environment and Science, K'gari (Fraser Island), Great Sandy National Park, <https://parks.des.qld.gov.au/parks/kgari-fraser/about> accessed 4 March 2021.
- ⁴ Bureau of Meteorology, Monthly Climate Summary for Queensland, <http://www.bom.gov.au/climate/current/month/qld/archive/202010.summary.shtml> accessed 4 March 2021.
- ⁵ Queensland State Disaster Management Plan, p.37.
- ⁶ Queensland State Disaster Management Plan, p.45.
- ⁷ Standard for Disaster Management in Queensland, <https://www.igem.qld.gov.au/assurance-framework/standard#:~:text=Standard%20for%20Disaster%20Management%20in%20Queensland.%20The%20Standard,Standard%20also%20provides%20a%20mechanism%20to%20assess%20performance> accessed 4 March 2021.
- ⁸ Department of Environment and Science, Park Features - <https://parks.des.qld.gov.au/parks/kgari-fraser/about> accessed 4 March 2021.
- ⁹ United Nations Educational, Scientific and Cultural Organization, Fraser Island - <https://whc.unesco.org/en/list/630> accessed 4 March 2021.
- ¹⁰ Changing European Uses - <https://parks.des.qld.gov.au/parks/kgari-fraser/about/culture> accessed 4 March 2021.
- ¹¹ Office of the Registrar of Indigenous Corporations, Paradise regained - <https://www.oric.gov.au/publications/spotlight/paradise-regained> accessed 4 March 2021.
- ¹² Queensland Government, National Park renaming recognises Traditional Owners - <https://statements.qld.gov.au/statements/80891> accessed 4 March 2021.
- ¹³ Department of Environment and Science, K'gari (Fraser Island), Looking after the park - https://parks.des.qld.gov.au/parks/kgari-fraser/about#looking_after_the_park accessed 4 March 2021.
- ¹⁴ Australian Bureau of Statistics, 2016 Census QuickStats, Fraser Island - https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/SSC31091 accessed 4 March 2021.
- ¹⁵ Disaster Management Act 2003 (Queensland), section 3.
- ¹⁶ Disaster Management Act 2003 (Queensland), section 4.
- ¹⁷ Disaster Management Act 2003 (Queensland), section 13.
- ¹⁸ Disaster Management Act 2003 (Queensland), section 16.
- ¹⁹ Disaster Management Act 2003 (Queensland) section 23; section 30.
- ²⁰ Disaster Management Act 2003 (Queensland), section 64.
- ²¹ Disaster Management Act 2003 (Queensland), section 75.
- ²² Disaster Management Act 2003 (Queensland), section 76.
- ²³ Disaster Management Act 2003 (Queensland), section 15.
- ²⁴ Disaster Management Act 2003 (Queensland), section 14.
- ²⁵ Disaster Management Act 2003 (Queensland), section 53; section 57.
- ²⁶ Fire and Emergency Services Act 1990 (Queensland), section 2.
- ²⁷ Fire and Emergency Services Act 1990 (Queensland), section 8B.
- ²⁸ Fire and Emergency Services Act 1990 (Queensland), section 53.
- ²⁹ Queensland Bushfire Plan, p.19.
- ³⁰ Fire and Emergency Services Act 1990 (Queensland), section 67.
- ³¹ Queensland Bushfire Plan, p.19.
- ³² Fire and Emergency Services Act 1990 (Queensland), Division 3.
- ³³ Office of the Registrar of Indigenous Corporations, April 2015. Paradise regained, Spotlight on, Australian Government, <https://www.oric.gov.au/publications/spotlight/paradise-regained> accessed 4 March 2021.
- ³⁴ De Satge on behalf of the Butchulla people #2 v State of Queensland [2014] FCA 1132.
- ³⁵ Aboriginal Cultural Heritage Act 2003 (Queensland), section 4.
- ³⁶ Aboriginal Cultural Heritage Act 2003 (Queensland), section 5.
- ³⁷ Aboriginal Cultural Heritage Act 2003 (Queensland), section 23(c)(3).

- ³⁸ Department of Aboriginal and Torres Strait Islander Partnerships, The cultural heritage duty of care, Queensland Government, <https://www.datsip.qld.gov.au/people-communities/aboriginal-torres-strait-islander-cultural-heritage/cultural-heritage-duty-care>, accessed 4 March 2021.
- ³⁹ Department of Agriculture, Water and the Environment, <https://www.environment.gov.au/heritage/places/world/fraser-island>, accessed 22 March 2021.
- ⁴⁰ Department of Environment and Science, <https://environment.des.qld.gov.au/management/world-heritage>, accessed 15 March 2021.
- ⁴¹ Department of the Premier and Cabinet, Fraser Island Community Advisory Committee, Register of Government Bodies, <https://governmentbodies.premiers.qld.gov.au/BodyDisplay.aspx?Parameter=170> accessed 15 March 2021.
- ⁴² Department of Agriculture, Water and the Environment, Australia's World Heritage, [https://www.environment.gov.au/heritage/about/world-heritage#:~:text=About%20world%20heritage,of%20where%20they%20are%20located.&text=These%20qualities%20are%20expressed%20in,\(the%20World%20Heritage%20Convention\)](https://www.environment.gov.au/heritage/about/world-heritage#:~:text=About%20world%20heritage,of%20where%20they%20are%20located.&text=These%20qualities%20are%20expressed%20in,(the%20World%20Heritage%20Convention)) accessed 15 March 2021.
- ⁴³ Nature Conservation Act 1992 (Queensland), section 4.
- ⁴⁴ IUCN World Heritage Outlook 2020, <https://worldheritageoutlook.iucn.org/explore-sites/wdpaid/67730> accessed 5 March 2021.
- ⁴⁵ Department of Environment and Science, Values Based Park Management Framework, <https://parks.des.qld.gov.au/management/plans-strategies/values-based-framework>, accessed 5 March 2021.
- ⁴⁶ Recreation Areas Management Act 2006 (Queensland), section 4.
- ⁴⁷ Department of Environment and Science Annual Report 2019, p.4, https://www.des.qld.gov.au/_data/assets/pdf_file/0024/214287/annual-report-2019-2020.pdf, accessed 6 March 2021.
- ⁴⁸ Department of Environment and Science, Service Delivery Statement 2019-20, p.10, <https://budget.qld.gov.au/files/2019-20%20DES%20SDS.pdf>, accessed 6 March 2021.
- ⁴⁹ Department of Environment and Science, Service Delivery Statement 2019-20, p.10.
- ⁵⁰ Queensland Bushfire Plan, p.2.
- ⁵¹ Queensland Bushfire Plan, p.9.
- ⁵² Queensland Bushfire Plan, p.13.
- ⁵³ Fraser Coast Bushfire Risk Management Plan, p.1.
- ⁵⁴ Queensland Bushfire Plan, p.10.
- ⁵⁵ Queensland State Disaster Management Plan, p.9.
- ⁵⁶ Queensland State Disaster Management Plan, p.46-47.
- ⁵⁷ Queensland Government, Disaster Management Guideline, Response, <https://www.disaster.qld.gov.au/dmg/Pages/DM-Guideline-2.aspx> accessed 12 March 2021.
- ⁵⁸ Queensland Bushfire Plan, p.39.
- ⁵⁹ Queensland Bushfire Plan, p.23.
- ⁶⁰ Queensland State Disaster Management Plan, p.37.
- ⁶¹ Queensland Parks and Wildlife Service, Good Neighbour Policy – Operational Policy, p.2.
- ⁶² Current & future state analysis: January 2019, p.32.
- ⁶³ New South Wales Rural Fire Service, Bush Fire Risk Management Plans, <http://www.rfs.nsw.gov.au/plan-and-prepare/know-your-risk/bush-fire-risk-management-plans> accessed 15 March 2021.
- ⁶⁴ New South Wales Rural Fire Service, Bush Fire Risk Management Plans
- ⁶⁵ Victorian Government, Safer Together, <https://www.safertogether.vic.gov.au/> accessed 9 March 2021.
- ⁶⁶ Queensland State Disaster Management Plan, p.36.
- ⁶⁷ Queensland Government Rural Fire Service, Operation Cool Burn, https://www.ruralfire.qld.gov.au/BushFire_Safety/Pages/Operation-Cool-Burn.aspx accessed 10 March 2021.
- ⁶⁸ Australasian Fire and Emergency Services Council, 2016 National Position on Prescribed Burning, page 4, <https://knowledge.aidr.org.au/media/4869/national-position-on-prescribed-burning.pdf> accessed 10 March 2021.
- ⁶⁹ Australasian Fire and Emergency Services Council, 2016 National Position on Prescribed Burning, page 4, <https://knowledge.aidr.org.au/media/4869/national-position-on-prescribed-burning.pdf> accessed 10 March 2021.
- ⁷⁰ Submission from The Institute of Foresters of Australia and Australian Forest Growers.

- ⁷¹ Royal Commission into National Natural Disaster Arrangements, 2020, Background paper: Cultural burning practices in Australia, <https://naturaldisaster.royalcommission.gov.au/publications/background-paper> accessed 10 March 2021.
- ⁷² Royal Commission into National Natural Disaster Arrangements, 2020, Recommendations 18.1 and 18.2, p.396, <https://naturaldisaster.royalcommission.gov.au/system/files/2020-11/Royal%20Commission%20into%20National%20Natural%20Disaster%20Arrangements%20-%20Report%20-%205Baccessible%5D.pdf> accessed 10 March 2021.
- ⁷³ Department of Home Affairs, 2020, National Disaster Risk Information Services Capability – Pilot project outcomes report, p.14, <https://www.homeaffairs.gov.au/emergency/files/ndrisc-pilot-public-outcomes.pdf> accessed 10 March 2021.
- ⁷⁴ Queensland Government, Indigenous Land and Sea Ranger Program, <https://www.qld.gov.au/environment/plants-animals/conservation/community/land-sea-rangers/about-rangers> accessed 10 March 2021.
- ⁷⁵ Australasian Fire and Emergency Services Council, National Position on Prescribed Burning, p.4.
- ⁷⁶ New South Wales Rural Fire Service, 2019, Community Protection Planning Guideline, <https://www.rfs.nsw.gov.au/plan-and-prepare/know-your-risk/community-protection-plans> accessed 12 March 2021
- ⁷⁷ Interagency Protocol for Fire Management, p.6.
- ⁷⁸ Emergency Management Professionalisation Scheme, <https://www.emps.org.au/about-us/> accessed 10 March 2021.
- ⁷⁹ Queensland Bushfire Plan, Climate Change, p.5.
- ⁸⁰ New South Wales Rural Fire Service, Operational Protocol OP 1.2.2 Remote Area Firefighting, page 3, <https://www.rfs.nsw.gov.au/resources/publications/corporate-governance-and-planning/operational-protocols> accessed 10 March 2021.
- ⁸¹ New South Wales Rural Fire Service, Operational Protocol OP 1.2.2.
- ⁸² New South Wales Rural Fire Service, Operational Protocol OP 1.2.2.
- ⁸³ Final Report of the NSW Bushfire Inquiry, p.xvi, <https://www.nsw.gov.au/nsw-government/projects-and-initiatives/nsw-bushfire-inquiry> accessed 12 March 2021.
- ⁸⁴ Final Report of the NSW Bushfire Inquiry, p.427-428.
- ⁸⁵ Queensland Bushfire Plan, p.39.
- ⁸⁶ Queensland Fire and Emergency Services, Queensland Disaster Management Arrangements Participant Guide, page 54. <https://www.disaster.qld.gov.au/dmp/Documents/Queensland-Disaster-Management-Arrangements-Participant-Guide.pdf> accessed 10 March 2021.
- ⁸⁷ Queensland Parks and Wildlife Service, Coastal and Islands Region Disaster Management Operational Plan.
- ⁸⁸ Queensland Parks and Wildlife Service, Coastal and Islands Region Disaster Management Operational Plan, p.15.
- ⁸⁹ Queensland Bushfire Plan, p.33.
- ⁹⁰ Queensland Bushfire Plan, p.49.
- ⁹¹ Queensland Bushfire Plan, p.49.
- ⁹² Queensland Bushfire Plan, p.49.
- ⁹³ Queensland Bushfire Plan, p.43.
- ⁹⁴ Inspector-General Emergency Management, 2018 Queensland Bushfire Review, p.91.
- ⁹⁵ Australian Disaster Resilience Glossary, <https://knowledge.aidr.org.au/glossary/> accessed 10 March 2021.
- ⁹⁶ Royal Commission into National Natural Disaster Arrangements, p.204 <https://naturaldisaster.royalcommission.gov.au/publications/html-report> accessed 10 March 2021.
- ⁹⁷ Civil Aviation Safety Authority, 2020, Fatigue Management for Flight Crew Members: Civil Aviation Advisory Publication CAAP 48-01 v3.2, p.102, <https://www.casa.gov.au/sites/default/files/guidance-fatigue-management-for-flight-crew-caap-48-01.pdf> accessed 10 March 2021.
- ⁹⁸ Ministerial briefing note to Minister Ryan dated 14 December 2020 tabled in the Queensland Parliament as part of the Estimates Committee Report.
- ⁹⁹ Final Report of the NSW Bushfire Inquiry, p.306, <https://www.nsw.gov.au/nsw-government/projects-and-initiatives/nsw-bushfire-inquiry> accessed 12 March 2021.
- ¹⁰⁰ Final Report of the NSW Bushfire Inquiry, p.92.
- ¹⁰¹ Queensland Bushfire Plan, p.36.
- ¹⁰² IUCN World Heritage Outlook 2020, <https://worldheritageoutlook.iucn.org/explore-sites/wdpaid/67730> accessed 15 March 2021.

¹⁰³ Queensland Government, Camping and vehicle permit booking locations, <https://www.qld.gov.au/recreation/activities/camping/booking-locations> accessed 16 March 2021.

¹⁰⁴ Queensland Government, Bookings for individuals and groups, <https://www.qld.gov.au/recreation/activities/camping/bookings> accessed 16 March 2021.

¹⁰⁵ Queensland Government Media Statement, New Check In Qld app makes COVID-Safe simpler in Queensland, <https://statements.qld.gov.au/statements/91572> accessed 20 March 2021.

¹⁰⁶ Marine Parks Act 2004 (Queensland).

¹⁰⁷ Forestry Act 1959 (Queensland).

¹⁰⁸ Queensland Bushfire Plan, p.44-45.

¹⁰⁹ Queensland Bushfire Plan, p.48-49.

¹¹⁰ Queensland State Disaster Management Plan, p.90 .

¹¹¹ Australian Institute for Disaster Resilience, Australian Warning System, <https://knowledge.aidr.org.au/resources/australian-warning-system/> accessed 19 March 2021.

¹¹² Queensland Government Fire and Emergency Services Newsroom, <https://newsroom.psba.qld.gov.au/Content/State-News/Bushfire-Warnings/Photo-Gallery/04-Bushfire-Warnings/Select/1020/1086/59/5098> accessed 19 March 2021.

PAGE LEFT INTENTIONALLY BLANK



Office of the Inspector-General Emergency Management

Phone	(07) 3029 8813
Email	info@igem.qld.gov.au
Web	www.igem.qld.gov.au
Postal address	GPO Box 1425, Mail Cluster 15.7 Brisbane, Queensland 4001

