Emergency Management Spatial Information Australia

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Members of the National Bushfire Boundaries Working Group
National Bushfire Recovery Agency
The Department of Prime Minister and Cabinet
Australian Government

To whom it concerns,

Following on from the Emergency Management Spatial Information Network Australia's (EMSINA) direct involvement in building, maintaining and hosting the Australian Government's authoritative National Bushfire Boundary webservices in 2020, the Group has conducted a national bushfire-boundary capability gap assessment. The assessment has identified the capabilities required by each State and Territory to raise its capability up in order to provide more accurate, timely, reliable and sustainable National products into the future; including the 2020/21 bushfire season.

Key takeaway points:

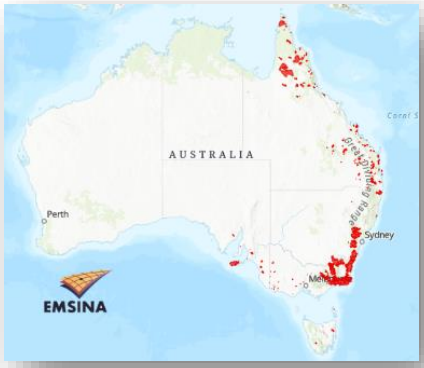
To meet the Australian Government's immediate requirement for bushfire boundaries involved a significant amount of manual work from state governments this fire season. The development of these products is still not automated.

The current ad hoc approach is labour intensive, time consuming and diverts critical resources away from operations.

Below is a table that summarises the capability gaps where targeted investment should be applied to meet the national requirements of a bushfire boundaries dataset into the future.

Following on from the events of the 2019/20 Bushfire Season EMSINA has worked closely with each jurisdictional member to identify a range of capability gaps that if mitigated would allow the authoritative agencies to continue providing the 3 priority products required by the Australian Government during a large National event:

- Current operational boundaries
- Fire season to date (image to the right)
- Fire history



Attached to this document (Attachment 1) is a table identifying capability gaps within each state and its Agencies across Australia.

- *As this topic requires technical knowledge of this discipline, EMSINA has provided simplified explanations of the different fields we have collected data against. See Attachment 2.*

It should also be acknowledged that some jurisdictions are considerably more mature in their bushfire boundary capture technology and data provision than others. These states are looking to invest in more advanced and accurate technologies, whilst other jurisdictions remain at the very beginning of their capability building journey. The table in attachment 1 will clearly highlight the maturity status of each jurisdiction.

In addition to the capability enhancements required by each jurisdiction EMSINA would like to raise the issue of insufficient national leadership within the Emergency Management spatial sector. The events of this summer clearly highlighted that this issue needs resolving. With less than 5 months until the next season starts it remains unclear whom within the Australian Government is responsible for setting and enforcing National standards, collecting and aggregating this data, and providing open access to these National products for the benefit of 'all' Australians. The EMSINA Group believe this governance issue needs to be resolved by the Australian Government before the next season begins.

Kind regards,

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Appendix 1: Gap Analysis Table

	OPERATIONAL															
	CURRENT								THIS SEASON	FIRE HISTORY						
		Current burnt area										Validated fire history available - Post season				
Jurisdiction and Agency	Current Incident point feed	Once off Creation for season 19/20	Available for upcoming seasons 20/21	Public warning system with fire shapes (eg Fires Near Me app)	Near realtime Linescan availability	Field data integration into Systems	Need for Software/data processing improvements for mapping systems	Need for Hardware/ network updates to improve performance	Need for additional staff to maintain these layers	Create /show planned burns areas	Operational/unvalidated Fire history available 19/20 - season to date	Yearly fire history - fire scar	Yearly fire history - severity	Single State - combined agency - fire history	Is satellite imagery available to create burnt area	Automated Fire severity available
ACT	Yes		Part of NSW RFS	Yes	Yes - limitations	Yes - limitations	Yes	Partial, network enhancments for field tech	Yes	Yes	Yes	Yes	Partial	Part of NSW RFS	No	No
NSW RFS	Yes		Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No (manual process)	Yes	Partial
NSW NPWS	Yes		Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes	Yes	yes	Yes	No (manual process)	Yes	Partial
Bushfire NT	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
NT NTFRS	Yes	Yes		No	No		Yes		Yes	Yes						
QLD QFES	Yes	Yes	No	Yes- partial - no shapes	Yes - partial	Yes - partial	Yes	No	Yes	Yes - partial	No	Yes - partial	No	No	Yes	No
QLD DES	No	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
SA CFS	Yes - limitations	Yes	Yes - hardware limitations	Yes- limitations	No	Yes - Limited	Yes	Yes	Yes	No	No	Yes - limitations	Another agency	No	Yes	No
SA DEW	No	Yes (in conjuction with the CFS)	As per CFS	As per CFS	No	As per CFS Yes - Prescribed Burns	yes	Yes	yes	Yes	Yes	No - partially available	No	Yes (some limitations)	Yes	No
TAS DPIPWE	Yes		Yes	Yes	No	Limited	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Mostly	No
VIC DELWP	Yes		Yes	Yes	Yes - limitations	Partial	No	Partial	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Partial
WA DFES	Yes	Yes	No	No -in progress	Yes	Yes	Yes	Yes	Yes	Yes - partial	Yes - partial	Yes - partial	No	No	Yes - partial	No

Appendix 2: Table definitions

Operational Section

Current Incident point feed: Agency has an incident point feed for all current bushfires - across their jurisdiction in near real time.

Current Burnt area section:

Once off creation for season 19/20: The current burnt area layer (for fires not yet OUT) was created as a once off process for the 19/20 fire season.

Available for upcoming seasons 20/21: Agencies which have capability to create a near real time current burnt area layer (for fires not yet OUT) which will be available for the upcoming season.

Public warning system with fire shapes (e.g. Fires Near Me app): Agencies/States which have a publicly available app or website which shows current fire shapes and warnings in near real time.

Near real time Linescan availability: Linescans data is available in near real time from aircraft into State/Agency mapping systems.

Field data integration into Systems: Near real time field data from a range of sources (Avenza, firemapper, collector, survey123) is integrated into agencies mapping systems.

Need for Software/data processing improvements for mapping systems: Agencies need access to software (eg FME, ESRI Portal) to improve data processing for mapping systems, to improve delivery of fire shapes to internal and public facing systems.

Need for Hardware/ network updates to improve performance: Agencies need improvement to system hardware or networks/wifi, to improve the performance of mapping systems across the state and improve data flow.

Need for additional staff to maintain these layers: Agencies need additional staff in spatial teams to capture near real time burnt areas or processing fire history data later in the season.

Fire History Section

Create /show planned burns areas: Ability to map and display planned burns across a State or an agency's jurisdiction.

Operational/unvalidated Fire history available 19/20 - season to date: Agencies ability to create an operational and unvalidated fire history dataset (everything burnt or still burning this season) during the season.

Validated fire history available - Post Season section:

Yearly fire history - fire scar: Agency's ability to create a yearly fire scar dataset to show fire history, which is validated.

Yearly fire history – severity: Agency's ability to create a yearly fire severity dataset to include in the fire history dataset, which is validated.

Single State - combined agency – fire history: State agency's combine their yearly fire history data into one fire history layer, by an automated process.

Is satellite imagery available to create burnt area: Agency's can access and process satellite imagery to detect fire scars in the landscape and create a burnt area dataset.

Automated Fire severity available: Agency's have available an automated process that identifies and classifies fire severity classes.