Review
of the
Seasonal Outlook

NAFM

26 June 2018

SOUTHERN AUSTRALIA SEASONAL BUSHFIRE OUTLOOK 2017

Bushfire Potential 2017
Above Normal   Normal
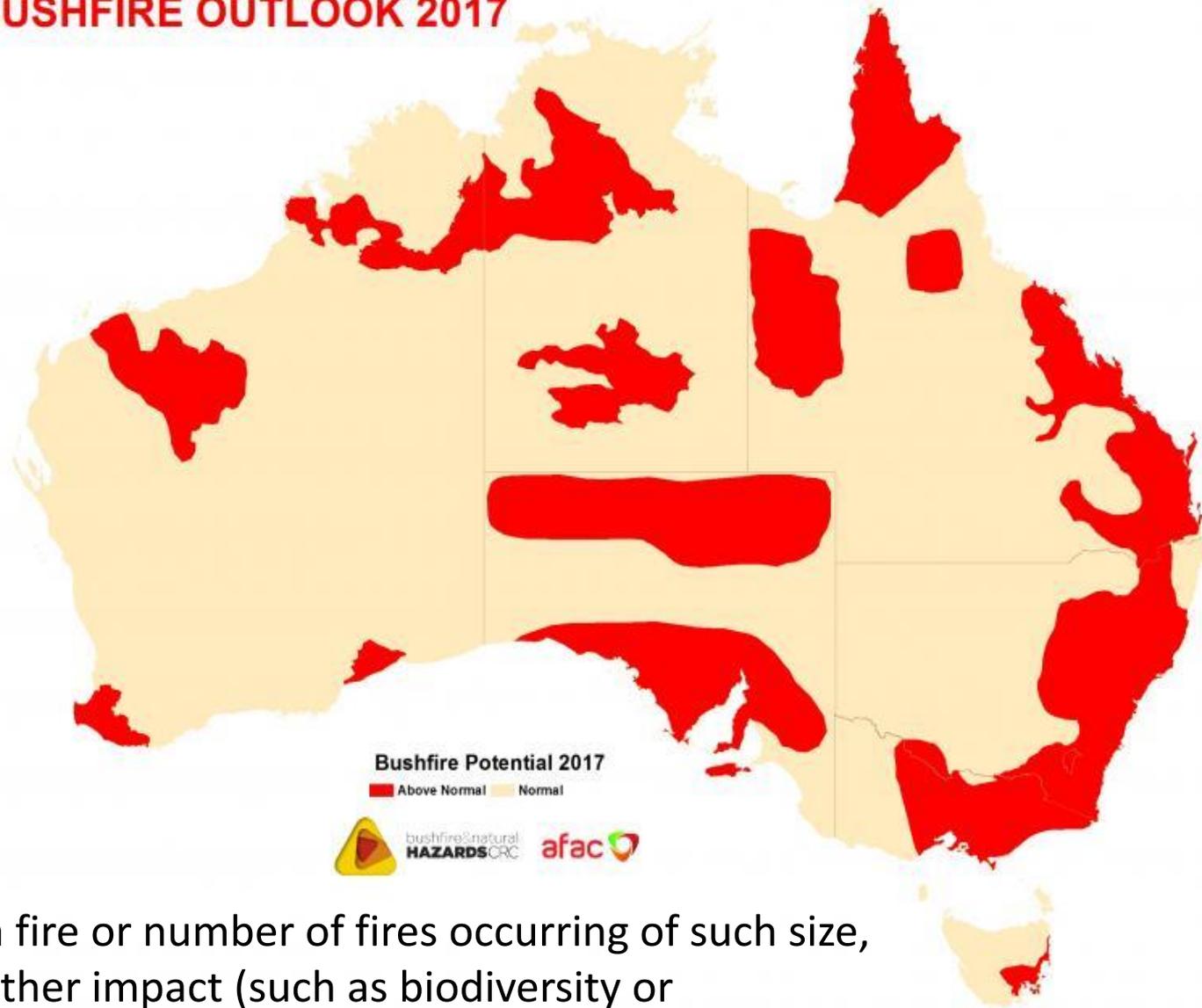
The chance of a fire or number of fires occurring of such size, complexity or other impact (such as biodiversity or emissions) which requires resources (from both a pre-emptive management and suppression capability) beyond the area in which it or they originate.

Input		Jurisdiction						
		ACT	NSW	QLD	SA	TAS	VIC	WA
Rainfall	Past 1, 3, 6 month totals	*		*	*	*		
	Past 1, 3, 6 month deciles		*	*			*	
	Anomalies						*	
	Outlook summary	*				*		*
	Chance of above median	*	*	*				
Temperature	Past 1, 3, 6 month deciles						*	
	Anomalies		*					
	Outlook summary					*		
	Chance of above median		*	*				
Climate	Outlook		*	*			*	
	Outlook video					*		
	Seasonal climate models		*	*		*		
	ACCESS-S POAMA						*	
	SOI & IOD & past trends						*	
	Streamflow data	*						
Bushfire fuel	Root zone soil moisture		*	*				*
	SDI anomaly				*	*		
	NDVI anomaly			*				
	KDBI anomaly		*					
	Grassland curing	*	*		*			
	Relative pasture growth			*				
	Aussie grass biomass							*

Desirable attributes of an outlook product

- Scientifically sound – the forecasting methods should be peer reviewed, scientifically documented and supported by sound science.
- Verifiable – it should be possible to assess the performance of outlooks against subsequently observed outcomes.
- Probabilistic – forecasts should faithfully represent future uncertainty.
- Clearly defined – meaning definitions and the meaning of forecasts should be clear and understandable.
- Relevant and actionable – meaning that the information in the forecast should be relevant to decision makers and be provided in ways which allow it to influence decisions and improve outcomes.

DELWP/CFA funded project that will deliver

A 2 year project

- To conduct a needs analysis for the development of seasonal fire forecast products that can be implemented in Victoria (and Australia), while answering key questions on the frequency of output, visualisation and acceptable levels of uncertainty
- To calibrate and assess long range FFDI forecasting models
- Development of experimental seasonal fire forecasting products that considers FFDI forecasts with possible enhancements that include fuel availability and consideration of comparison to similar season types
- The project is still to go through the CRC EOI process

NFDRS Proposal

| Year 2 (2020-21)		
Seasonal Outlook products	Integration of long term fuel and climate information to provide a more meaningful and accurate seasonal outlook	Improved decision making for fire mitigation works and resourcing such as timing of aircraft. Removes need for significant activity in each jurisdiction to produce locally derived products.

Proposed input Examples

Rainfall and soil moisture	Temperature	Climate Drivers	Local fuel loads and conditions
Past 1, 3, 6 month rainfall totals http://www.bom.gov.au/climate/maps/	Past 1, 3, 6 month temperature anomalies http://www.bom.gov.au/climate/maps/	Current state of ENSO and the IOD http://www.bom.gov.au/climate/enso/	Root zone soil moisture
Past 1, 3, 6 month rainfall deciles http://www.bom.gov.au/climate/maps/	Past 1, 3, 6 month temperature deciles http://www.bom.gov.au/climate/maps/	Forecasts for El Nino-Southern Oscillation (ENSO) and the Indian Ocean Dipole (IOD) http://www.bom.gov.au/climate/enso/	SDI anomaly

Proposed input Examples cont.

Soil moisture anomalies and deciles http://www.bom.gov.au/climate/drought/#tabs2=Soil-moisture	Climate outlook summary http://www.bom.gov.au/climate/outlooks/#/temperature/summary	Trend in fire season severity http://www.bom.gov.au/state-of-the-climate/	NDVI anomaly http://www.bom.gov.au/climate/maps/
Climate outlook summary http://www.bom.gov.au/climate/outlooks/#/rainfall/summary	Chance of above/below median temperature http://www.bom.gov.au/climate/outlooks/#/temperature/maximum/median/seasonal/0		KDBI anomaly
Chance of above/below median rainfall http://www.bom.gov.au/climate/outlooks/#/rainfall/median/seasonal/0			Grassland curing
			Relative pasture growth
			Aussie grass biomass

DFES Analysis flow chart
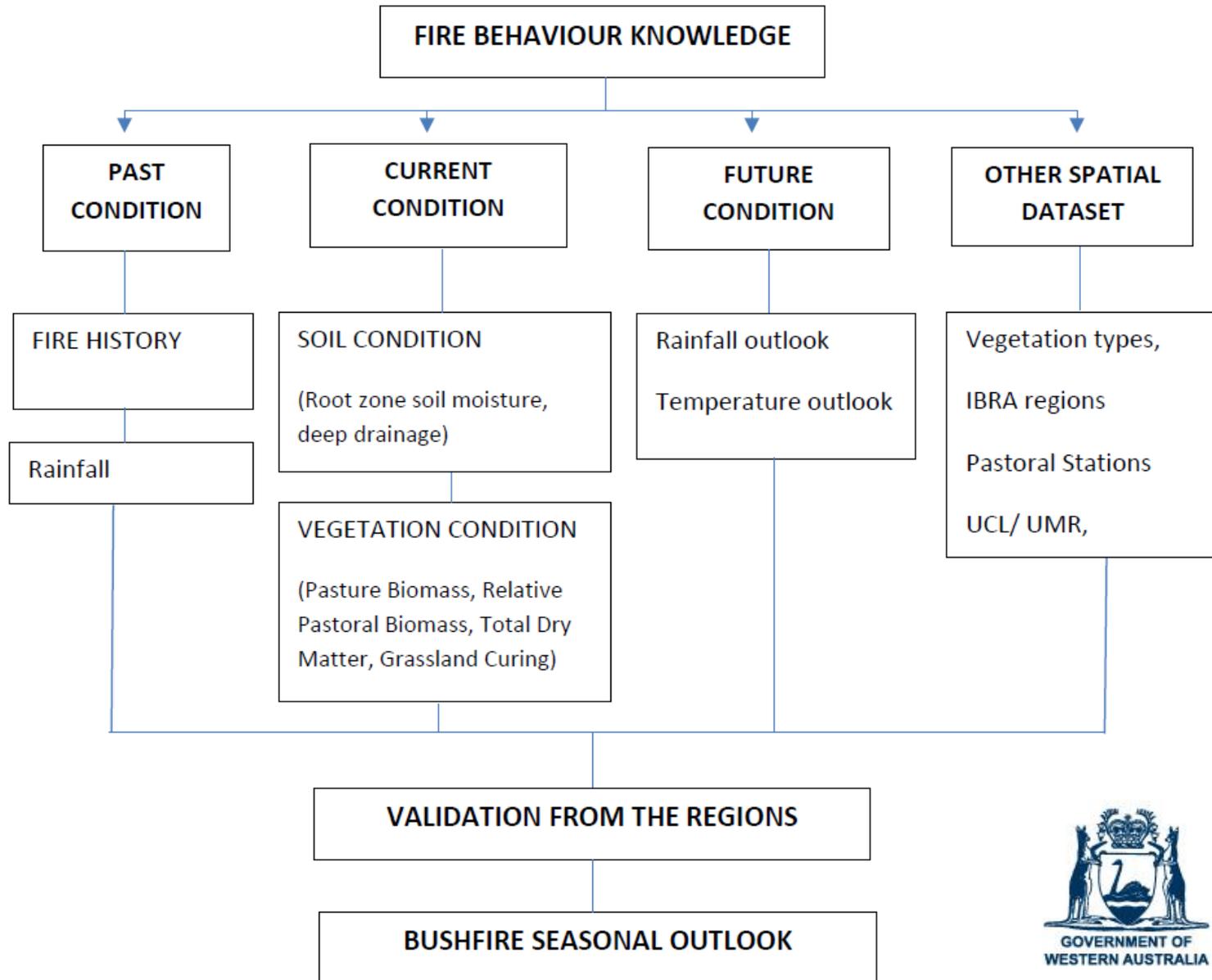
Conclusions

- The current system does not reflect the PSG strategy. E.g. it does not provide confidence through scientifically rigorous, reliable and specific PS

- Two workshops have been held and significant work has been undertaken over the past two years by the Systems group, Amelia Dell, David Jones, Rochelle Richards, Greg Esnouf et al

- Funding is likely to be made available to develop a product that is verifiable and is true to the PSG strategic drivers and is fit for purpose so that decisions on preparedness levels are better supported

- This DELWP/CFA project would build the foundations of a long range forecast product that would fit perfectly with a NFDRS that is modular and open to continuous improvement

Questions?

Fire on Prawle Rd at Dundathu.
Photo: Alistair Brightman.