



AUSTRALIAN FLAMMABILITY MONITORING SYSTEM WEBSITE

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Information currently displayed

Layer	Method	Resolution		Latency	Reference
		Spatial	Temporal		
Live FMC (%)	Inversion of physical models using MODIS reflectance data	500 m	4 days	4 days	Yebra et al. 2018.
Uncertainty (%)	Standard deviation of 40 best FMC estimates				
Flammability Index (0-1, unitless)	Logistic regression models between fire occurrence from the MODIS burned area product and predictor variables derived from FMC estimates			8 days* forecast	
Soil moisture at 0-10 and 10-35 cm	BoM's JASMIN modelling system	5km	Daily	7 days	Dharssi et al. 2017

Uses in fire management

The AFMS is **available to anyone**, including fire and land managers and other industries such as insurance and agricultural sectors and electricity and water suppliers. Individual community members such as farmers could also use the AFMS to assess how dry their property is when preparing for fire season

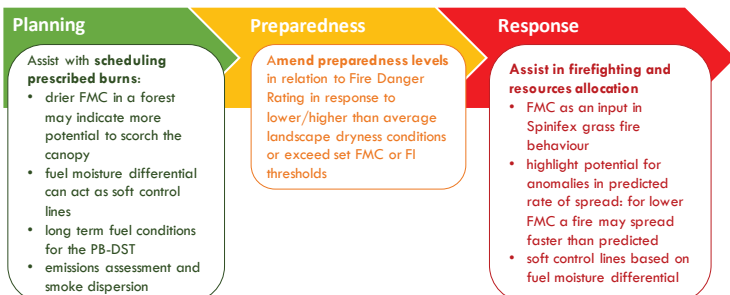


Fig. 1. Current and potential uses of the AFMS in fire management.

New look and Features in <http://anuwald.science/afms>

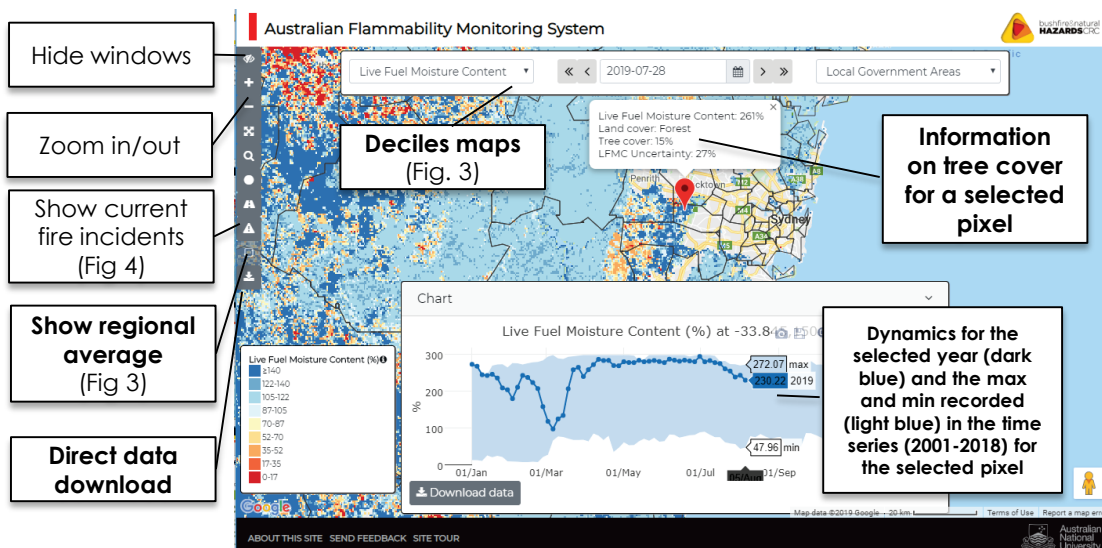


Fig. 2. Live FMC around the Sydney Basin area. The pop-up represents the information on Live FMC, uncertainty in the estimates as well as the land cover and the percentage tree cover for a random pixel.

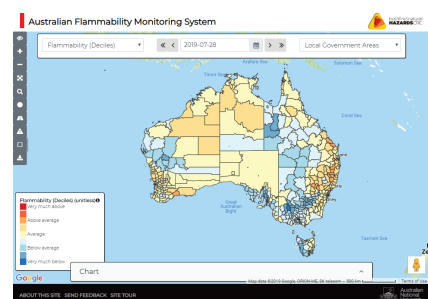


Fig. 3. Example of the flammability Index decile map averaged by local government areas to identify areas of low or high values, relative to normal conditions at a location and time of year

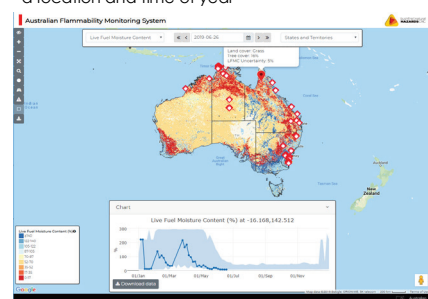


Fig. 4. Live FMC map showing the fire incidents for the selected day

Future developments

- Pilot prototype of high-resolution AFMS using high spatial resolution (<30m) satellite imagery included in the Geoscience Australia Digital Earth Australia (GA-DEA)
- This will facilitate the utilization and sustainability of the AFMS in the longer term if the experimental service we provide gets transitioned to GA

References

- Yebra et al. 2018. A fuel moisture content and flammability monitoring methodology for continental Australia based on optical remote sensing. RSE 212, 260-272
- Dharssi, et al. 2017, JASMIN: A prototype high resolution soil moisture analysis system for Australia, Research Report No. 026, Bureau of Meteorology.

END USER STATEMENT 'This new technology has enormous potential to improve the efficiency of bushfire operations across Australia and drive an expansion of our capability. The provision of accurate, spatially explicit, near real-time estimates of FMC and flammability would permit more accurate targeting of scarce bushfire fighting resources in time and space. It would no longer be necessary to estimate jurisdiction-wide readiness based on anecdotal extrapolation of conditions at a few locations'. Adam Leavesley, ACT Parks and Conservation Service