

The impact of the containment escape from backburn operations on the Busby's Flat fire

4 - 9 October 2019

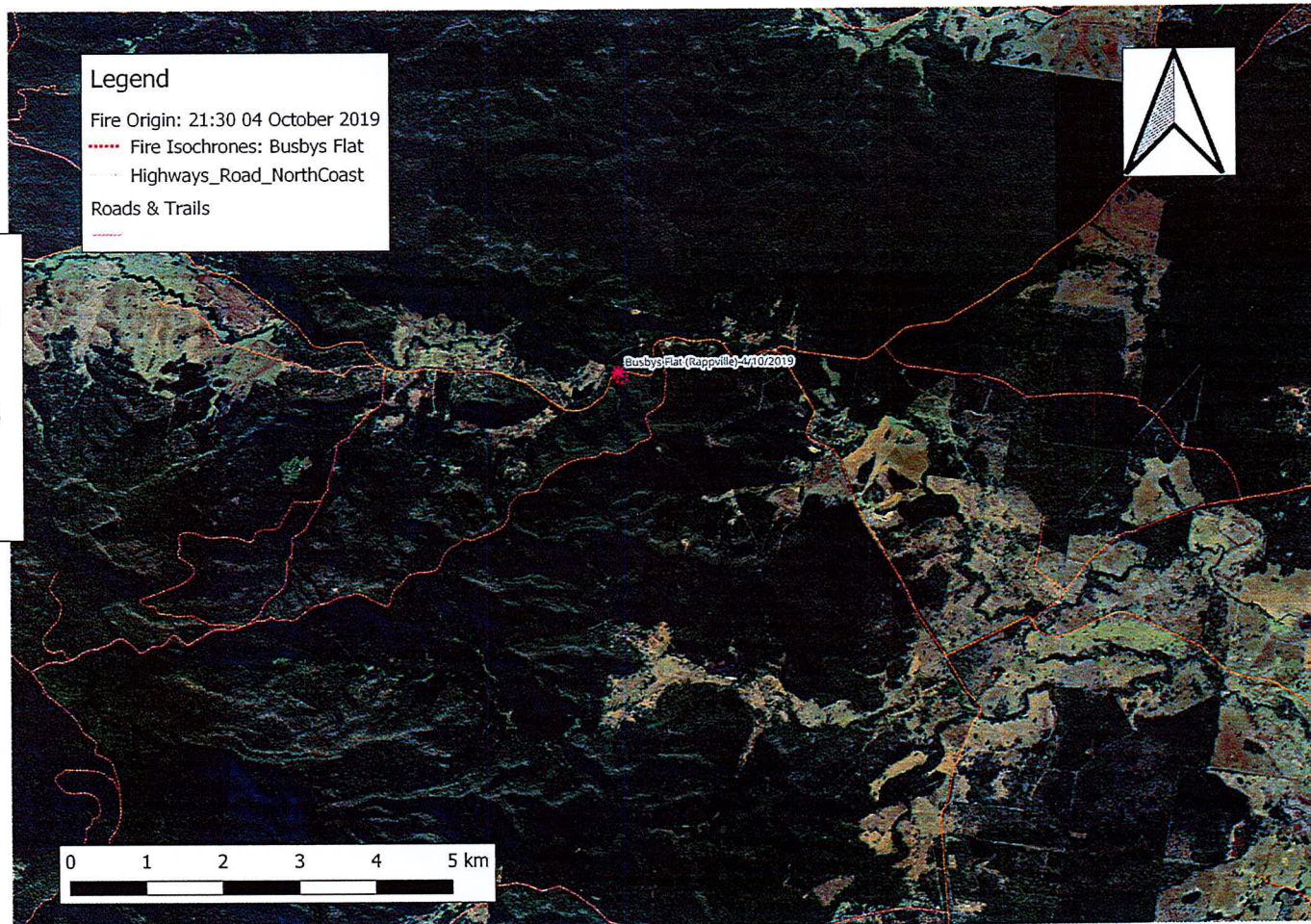
Preliminary Case Study

Nicholas Gellie

BSc, MSc (ANU) Landscape susceptibility to severe fire

Fire detected at 21:30 - 4 October 2019

Size: 6 ha

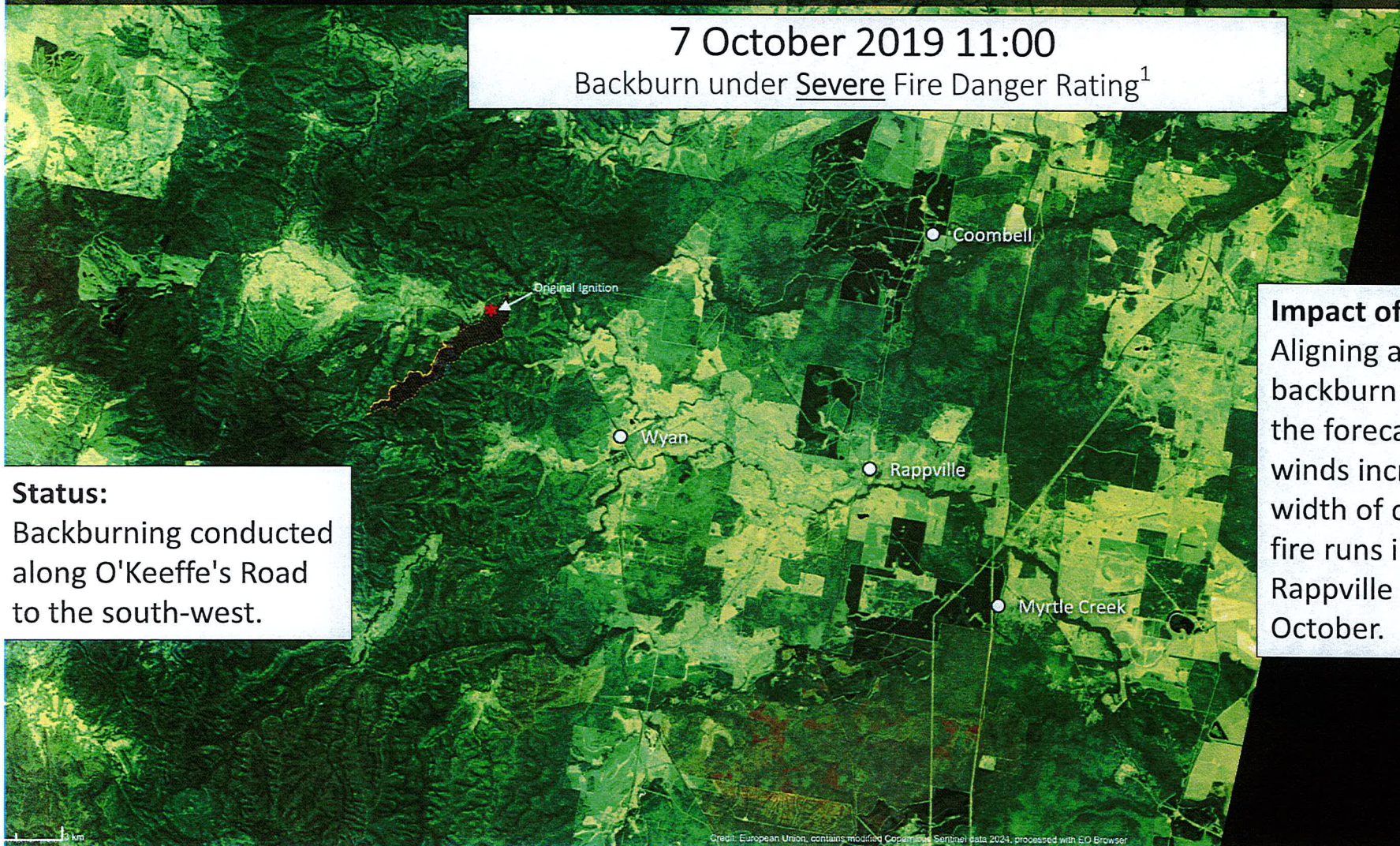


Status:
The small fire grew from 1 x 5m in size on the southern side of Busby's Flat Road to 4 ha within 2 hours.

2019-10-07 00:00 - 2019-10-07 23:59, Sentinel-2 L2A, False color (urban)

7 October 2019 11:00

Backburn under Severe Fire Danger Rating¹



Status:

Backburning conducted along O'Keeffe's Road to the south-west.

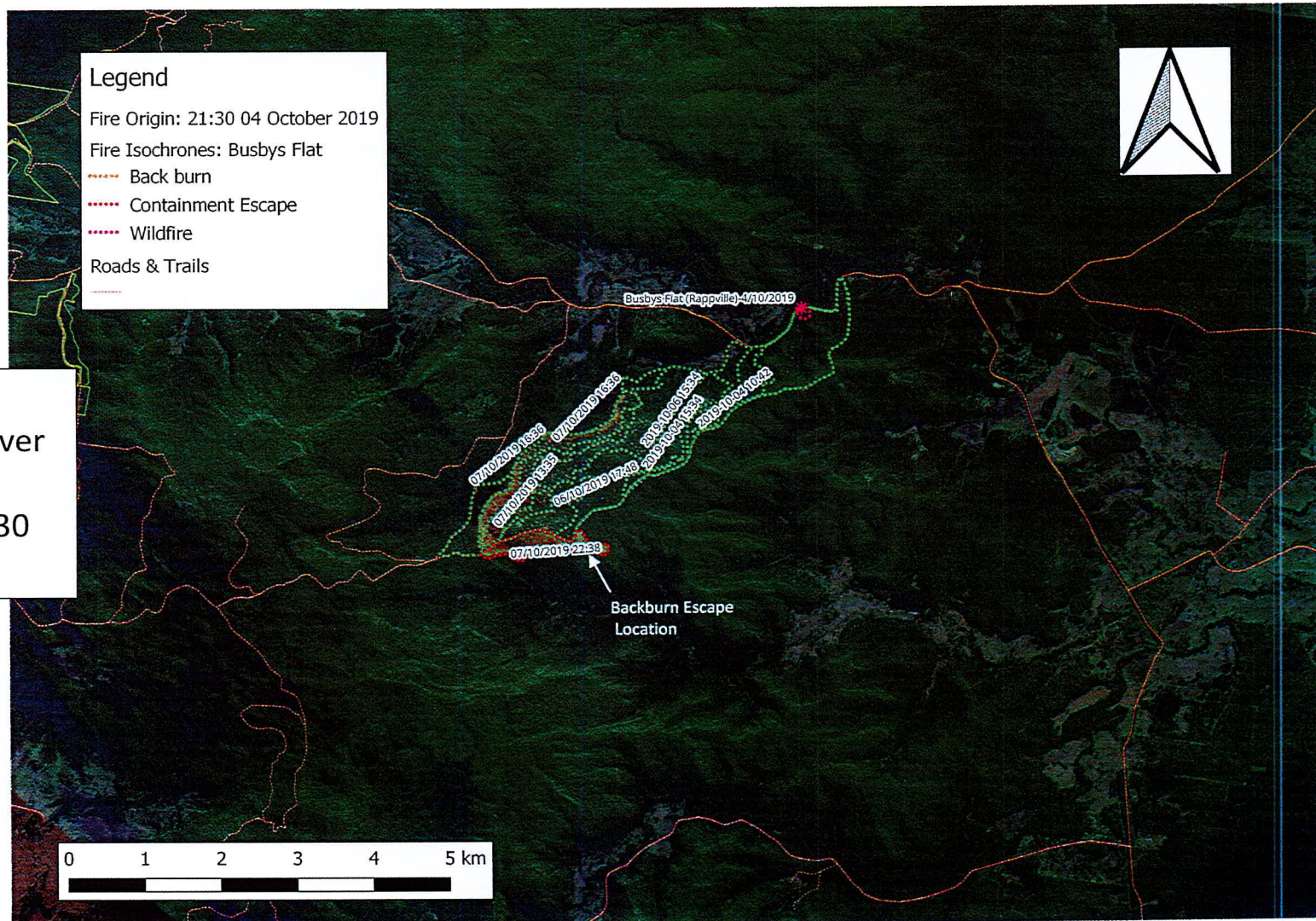
Impact of backburn:
Aligning a 6 km long backburn at 45° to the forecast westerly winds increased the width of consequent fire runs into the Rappville Valley on 8 October.

¹A Total Fire Ban is in place for Monday 7th October 2019 for the Northern Rivers. Fire Danger Rating is Severe. (NSW RFS - Northern Rivers Zone)

<https://www.facebook.com/NorthernRiversZone/posts/pfbid02t7ASn2G1D116YneLXx2DvBu5Z2a1ANchFzDT7EYg4HxSJoUAAWxClnvTqITtNWNz/>

Fireline at 22:38 on 7 October 2019 showing backburn escape

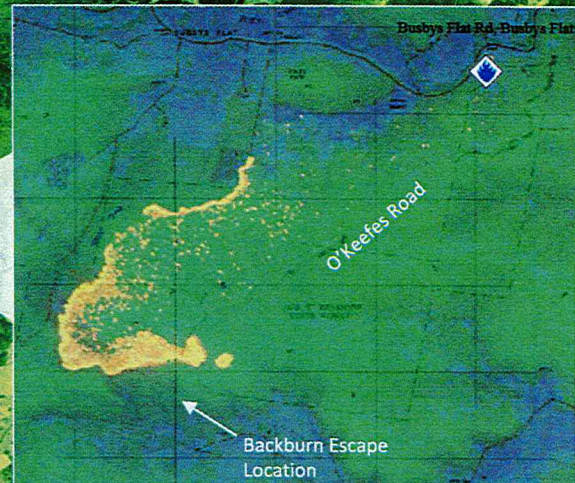
Spot-over from SW corner of O'Keefes Road containment line between 21:30 and 22:00



Status:
Backburn spotted over
containment lines
sometime after 21:30
on 7 October.

08 October 2019 - 08:42 AM

RFS Advice map showing backburn escape on morning of 8 October
– expected Fire Danger Rating **Extreme**¹



NSW Rural Fire Service (Facebook):²
“Busby Flat Rd Fire: A fire burning approx 15km west of Rappville broke containment late yesterday and is burning within the Mt Belmore State Forest. Today the fire is likely to burn under strong westerly winds towards the Old Tenterfield Rd in the Wyan, Wineshanty area.”

ADVICE

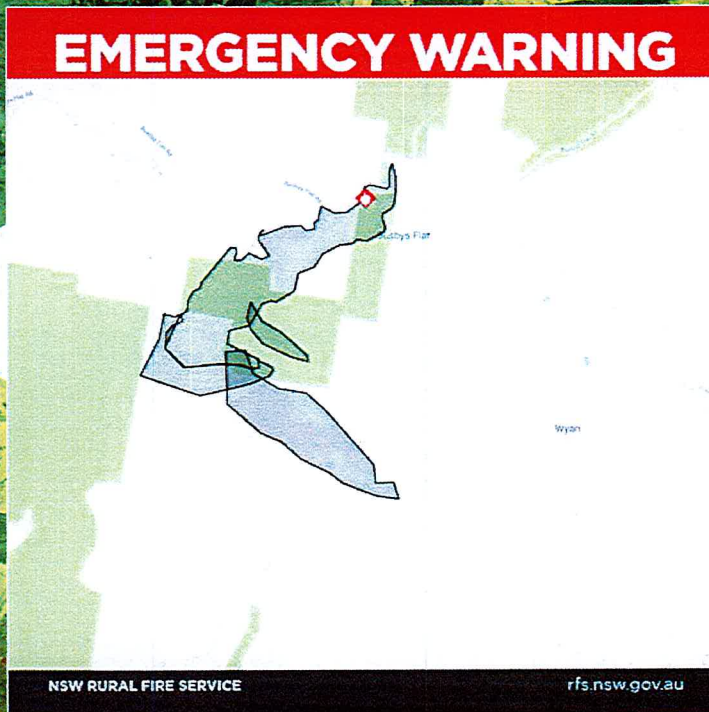
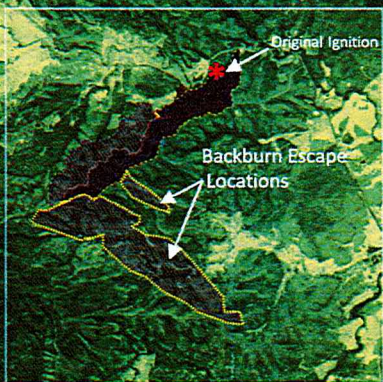
¹Tuesday 8th October is a day of **Extreme Fire Danger** and is a Total Fire Ban for the Far North Coast. Temperature is expected to be around 38 degrees, humidity around 11% and winds gusting to 55 kph. (NSW RFS - Northern Rivers Zone)

<https://www.facebook.com/NorthernRiversZone/posts/pfbid02tt474Ha3rX8UBMSJCj3M53ZXQwKQAmKxhL4vzqBSP6sEETCtkM5IWXmRr9xhfA6A/>

²NSW RFS - <https://www.facebook.com/nswrfs/photos/a.1015049969320552/10157311619110552/>

08 October 2019 - 11:24 AM

RFS Emergency Warning map showing two backburn escapes under severe – extreme fire conditions



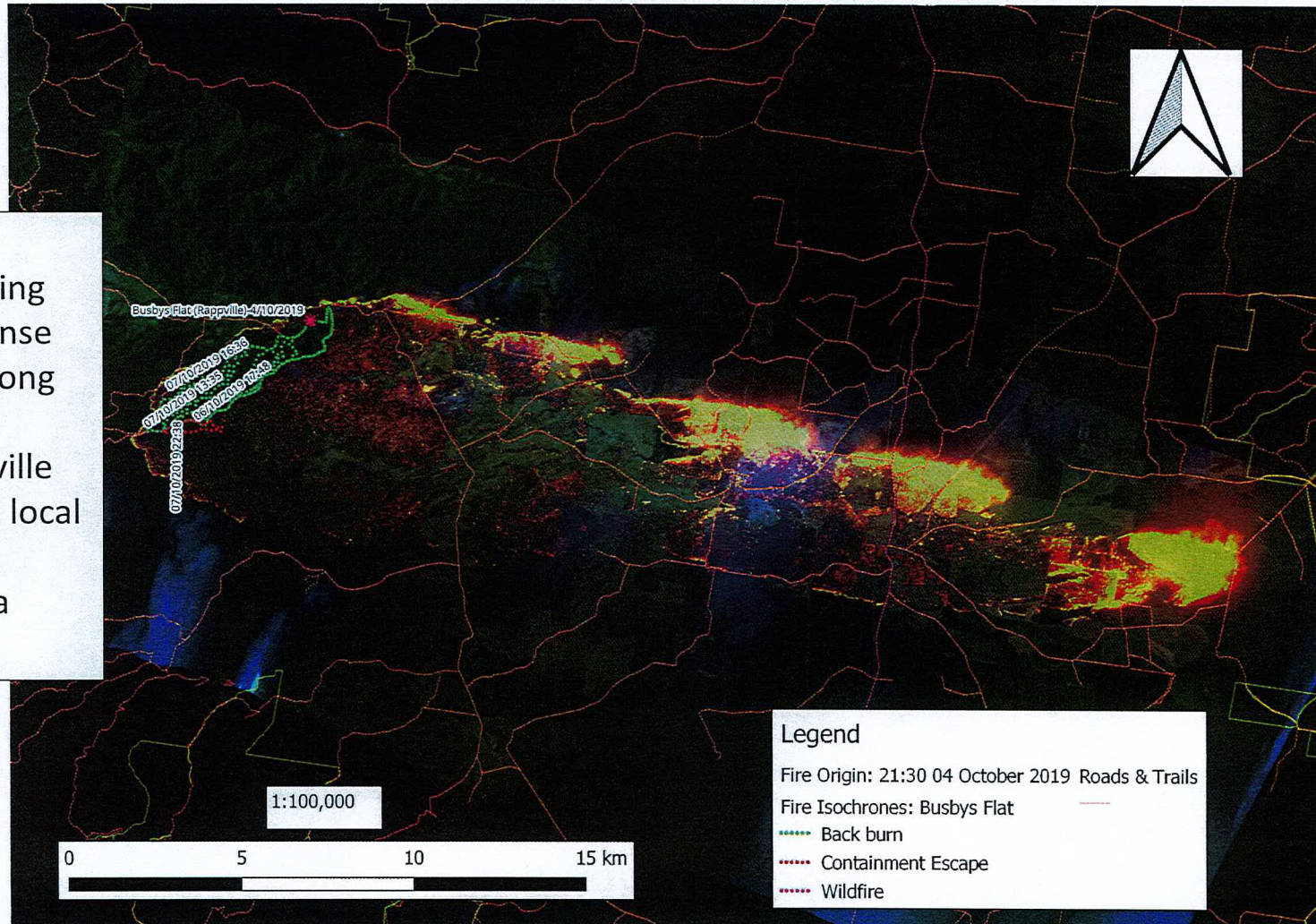
EMERGENCY WARNING: BUSBY FLAT RD, BUSBY FLAT¹

The fire continues to burn in an easterly direction in the vicinity of Seery Rd, Phillips Swamp Rd towards Old Tenterfield near Wyan & Wineshanty. Residents in the area should seek shelter as the fire approaches. It is too late to leave. Protect yourself from the heat of the fire.

¹NSW Rural Fire Service Facebook
<https://www.facebook.com/nswrfs/posts/pfbid02dq8B5vhsMYG4domPTorMFGbL4mgkMrUfFwBtQRUK6HAGCQv53VAA36vxA6pWIZDI>

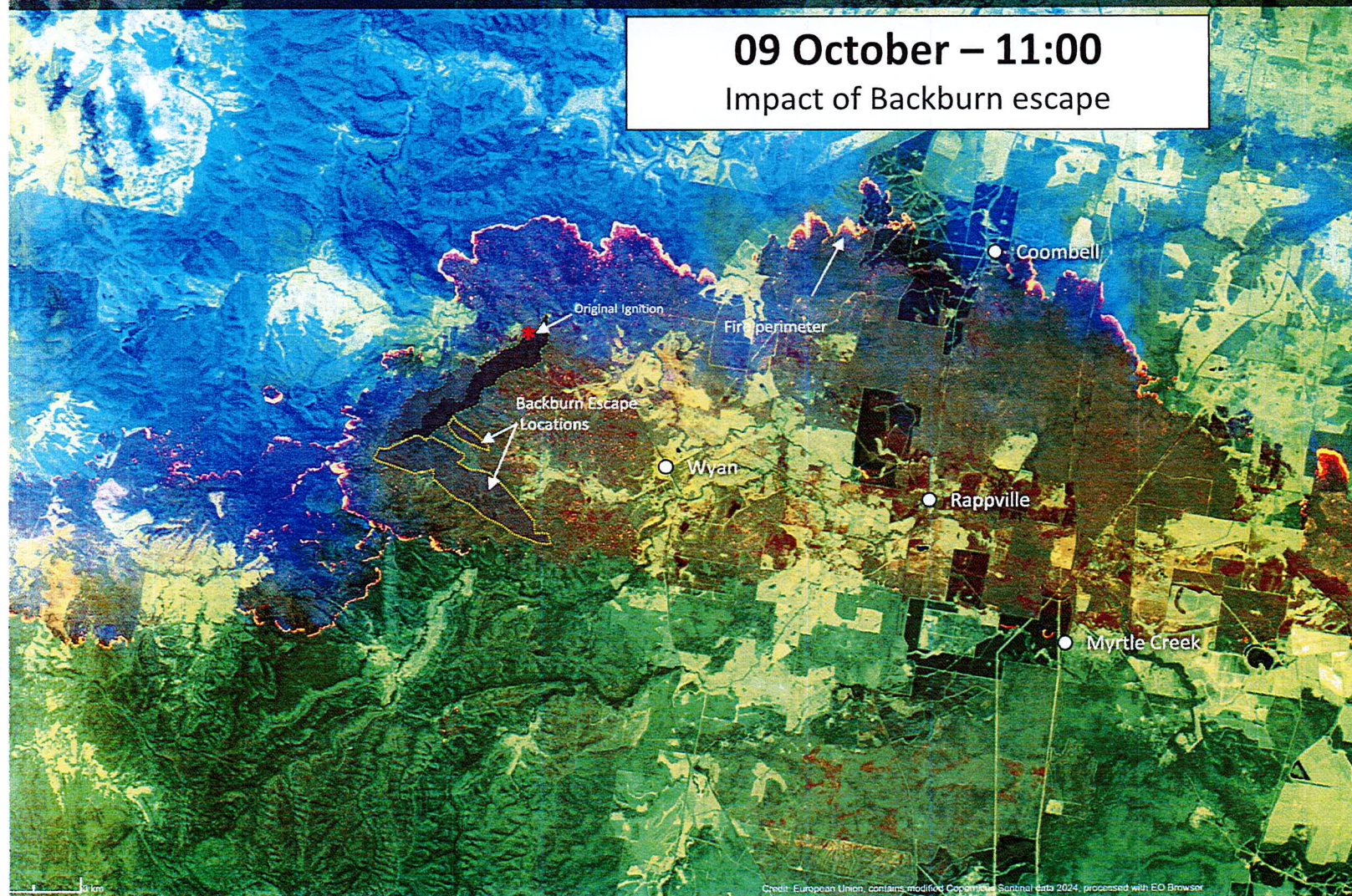
17:41 8 October 2019
Intense backburn escape under extreme FDR

Status:
Escaped backburning resulted in an intense fire nearly 32 km long and 5-6 km wide through the Rappville Valley burning out local residents, farming livestock and koala colonies.



09 October – 11:00

Impact of Backburn escape



Impact of Backburn escape

- The Busby's Flat Fire burnt for 8 weeks affecting a total area of 51,826 ha.
- 56 homes were damaged or destroyed.
- 134 additional buildings were damaged or destroyed.
- 3,219 km of fencing was destroyed.
- 7 injuries were recorded.

*Coronial Inquiry into the 2019/2020 fire season, Day 19.

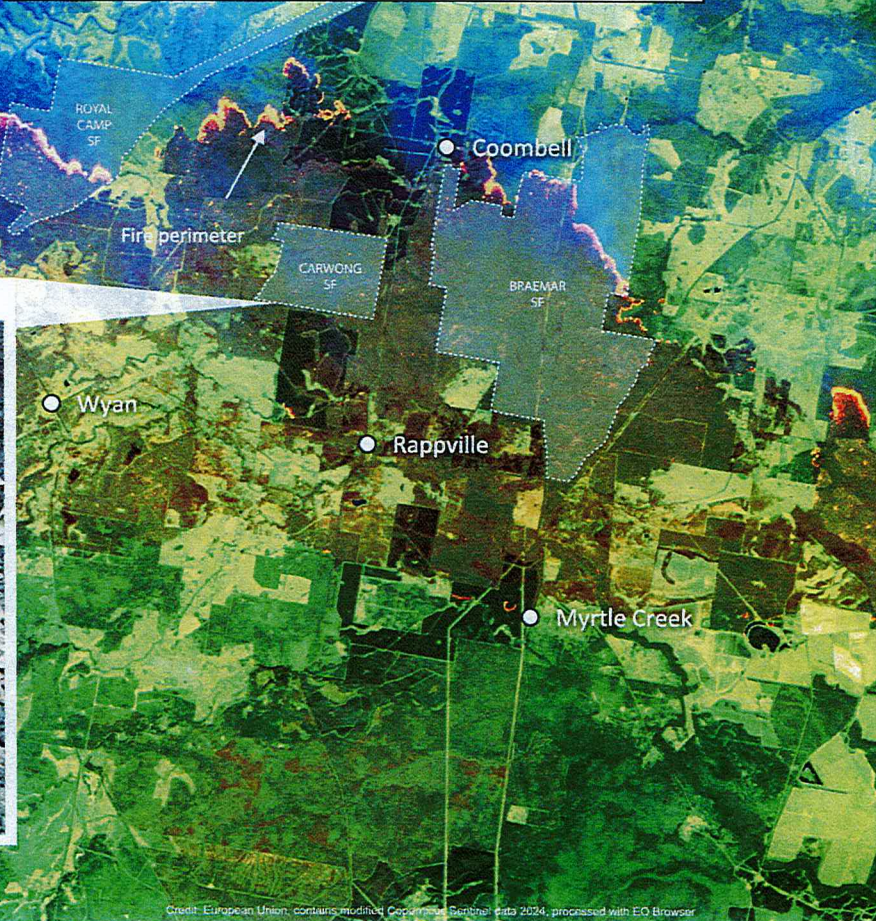
09 October

Impact of Backburn escape

Koala killed by the Rappville fire in Carwong State Forest October 2019



<https://www.nefa.org.au/tags/braemar>



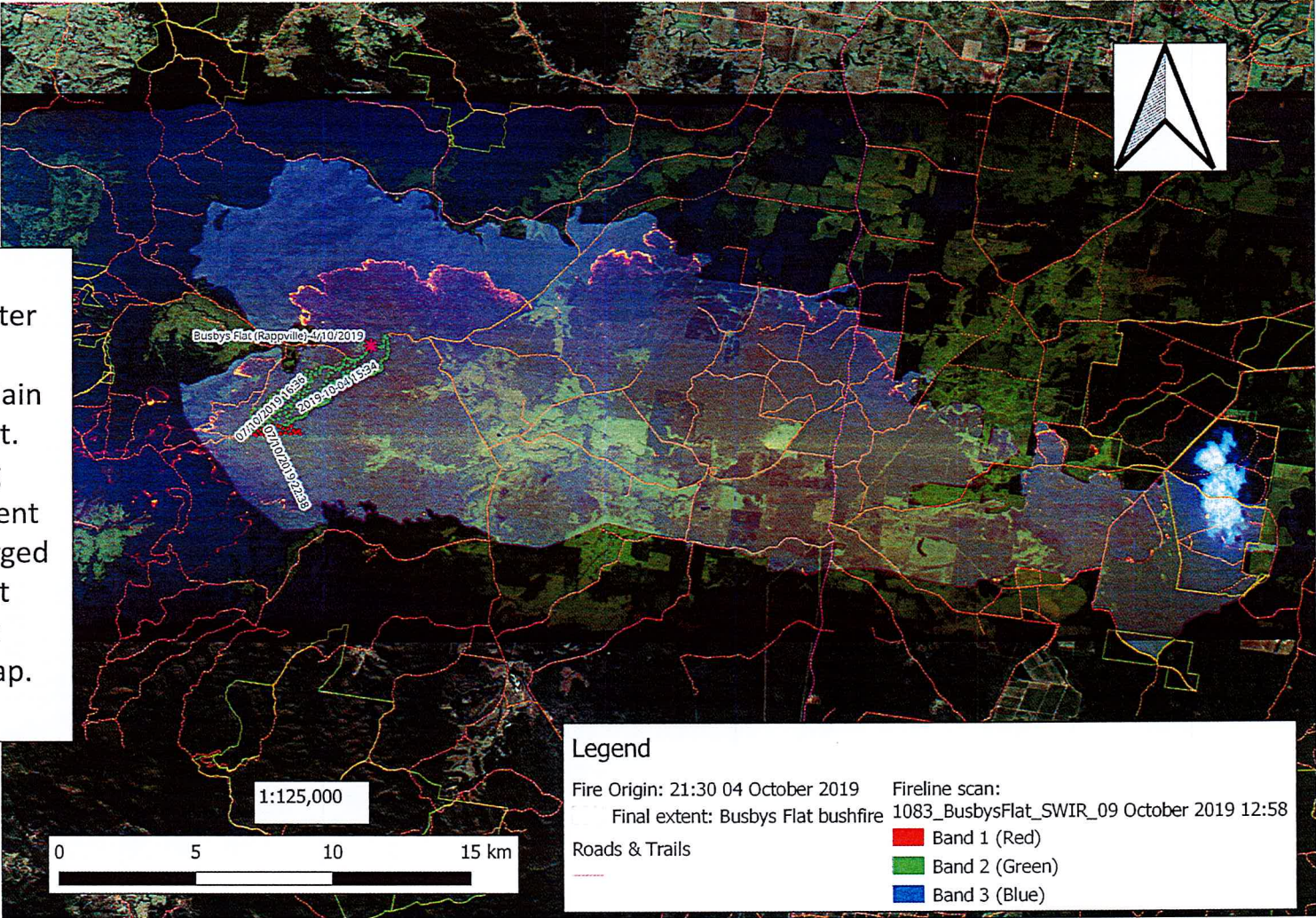
Impact of Backburn on native fauna and livestock

- Over 1000 livestock killed.¹
- 14,590 ha of State Forest and National Park burnt.¹
- Highly significant Koala populations with an estimated population of 350-700 Koalas directly affected in Royal Camp, Carwong and Braemar State Forests.²

¹Coronial Inquiry into the 2019/2020 fire season, Day 19.

²North East Forest Alliance (NEFA): https://www.nefa.org.au/busbys_flat_fire_burns_koala_colony

Final Extent of Busby's Flat Fire (39,270 ha)



Estimated Economic Losses from Busby's Flat backburn escape

Total economic losses in Rappville Valley more than **\$80,000,000** (estimate to be confirmed) for a roadside fire that could have been extinguished overnight from the evening of 4 October until the following day.

What is the best alternative to high risk – high impact backburning immediately before days of severe – extreme fire danger?

- Early detection
- Rapid suppression
- Effective mop-up
- Small fire perimeter, preferably less than 10-20 ha.
- Availability of adequate resources to implement this.

Cost Component	Calculation	Estimate
Suppression Costs	Estimate awaiting further confirmation	\$2,000,000
Houses Destroyed or Damaged	=56 x \$300,000 per house	\$16,800,000
Other Buildings	=34 x \$100,000 per building	\$3,400,000
Fencing	=1000 x \$25000 per km	\$25,000,000
Loss of Farming Livestock	=1000 x \$1000 per cow	\$1,000,000
Railway Infrastructure	=34 x \$1,000,000	\$5,000,000
Powerlines	= 100 km x \$200,000 per km	\$20,000,000
Trauma personal recovery	=50 x \$100,000 per person	\$5,000,000
Visual Amenity, Wildlife, Timber Losses	Approximate – needs further validation	\$2,000,000
TOTAL:		\$80,200,000