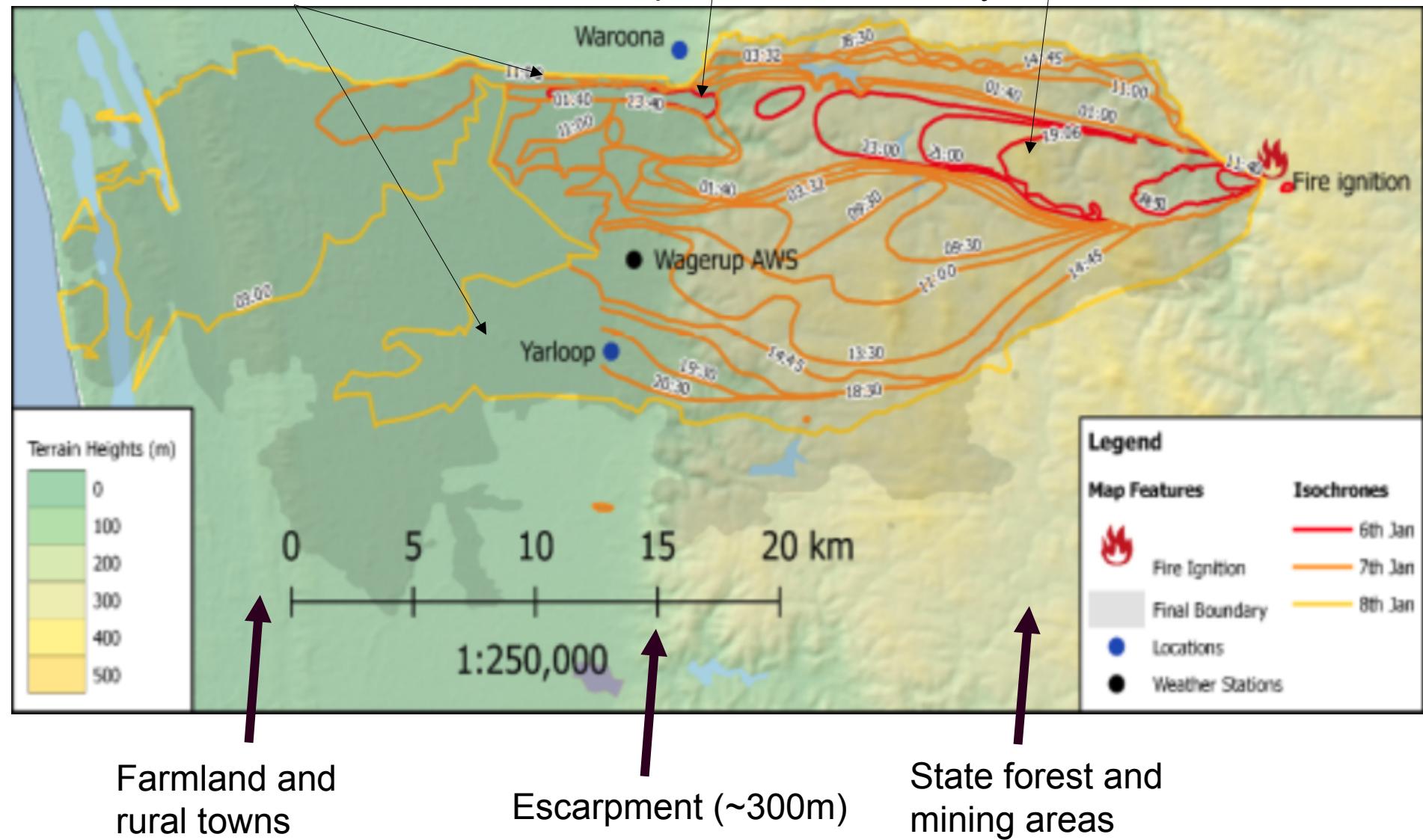


Waroona Fire

Emberstorms

Downslope run

PyroCB



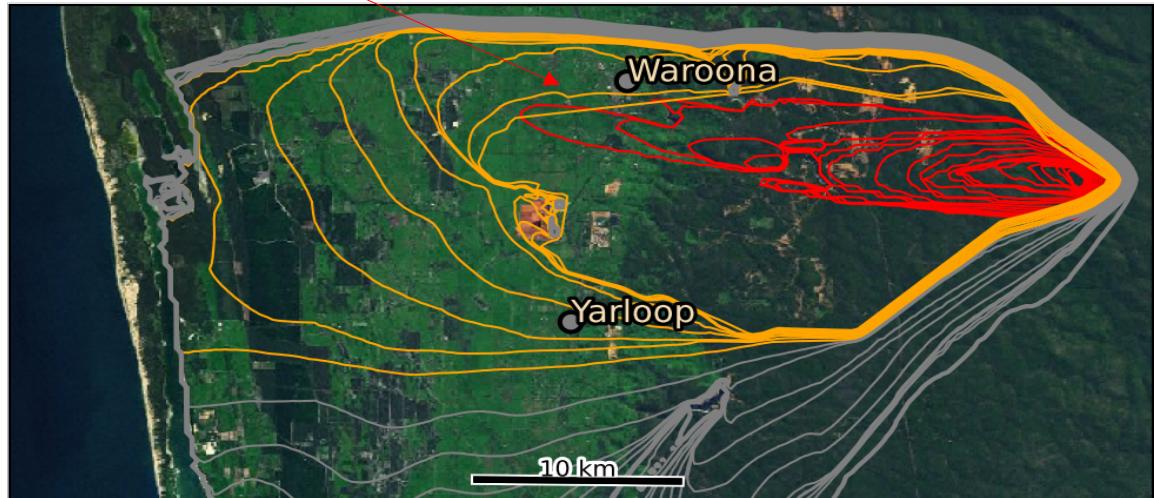
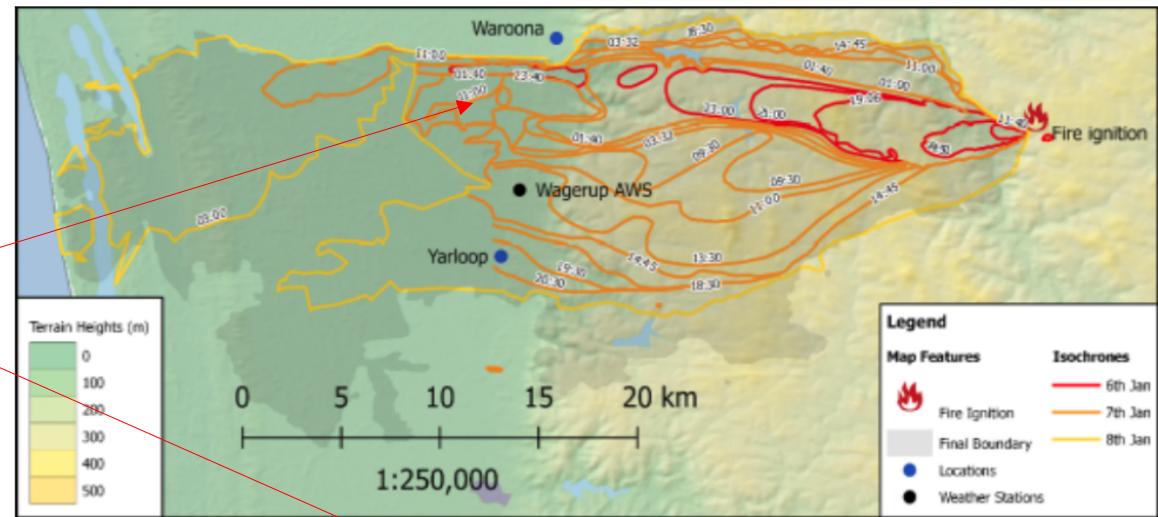
Simulated Fire

Initial polygon and spotting added by Harvey

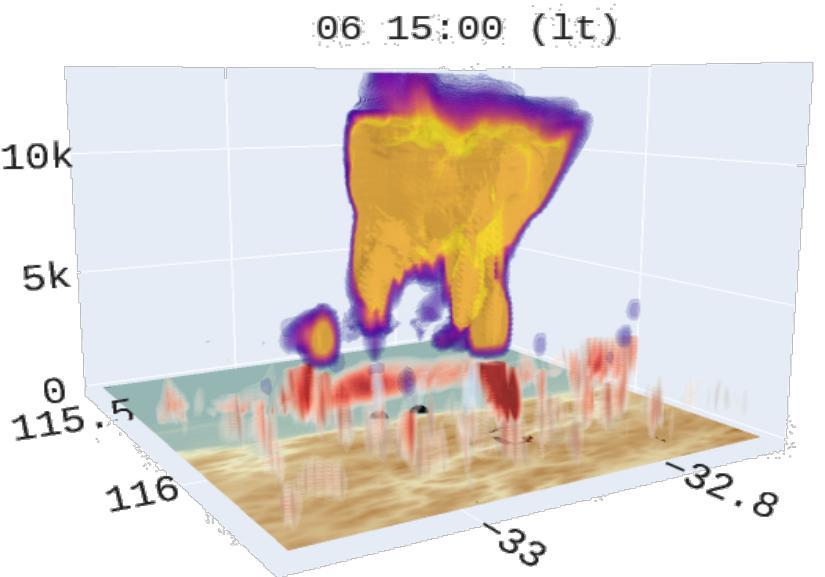
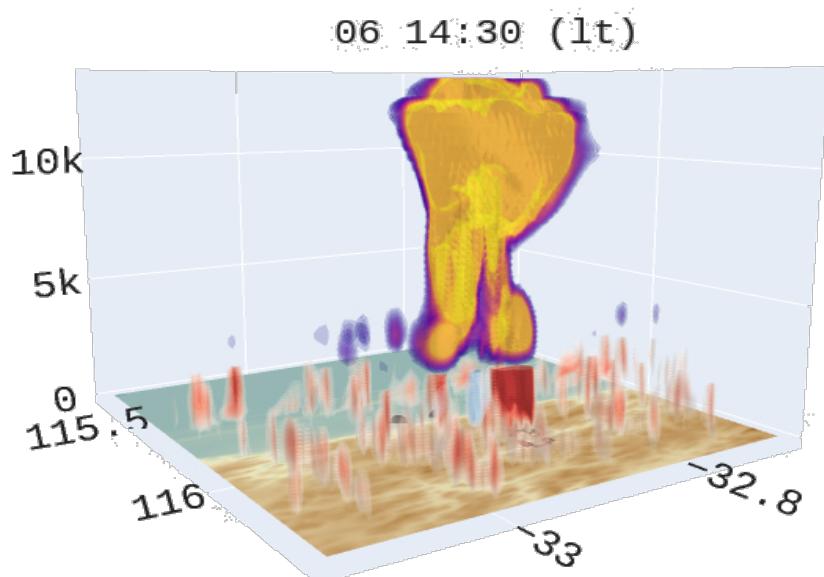
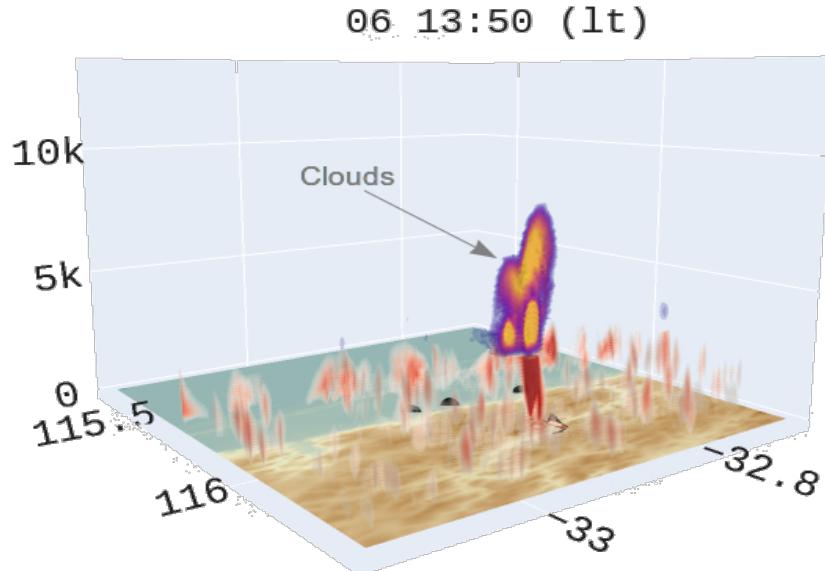
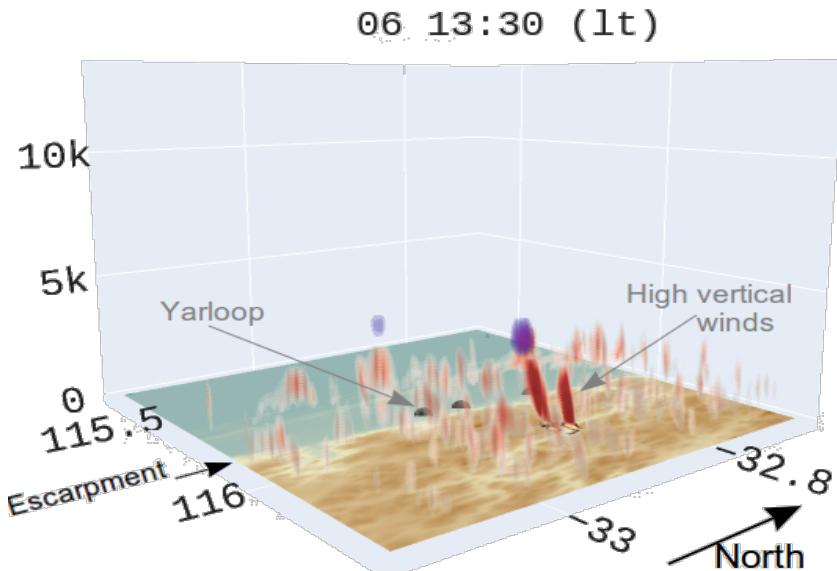
Downslope run on first evening can be seen

Second day coverage not unreasonable.

Model does not include impacts from control attempts.

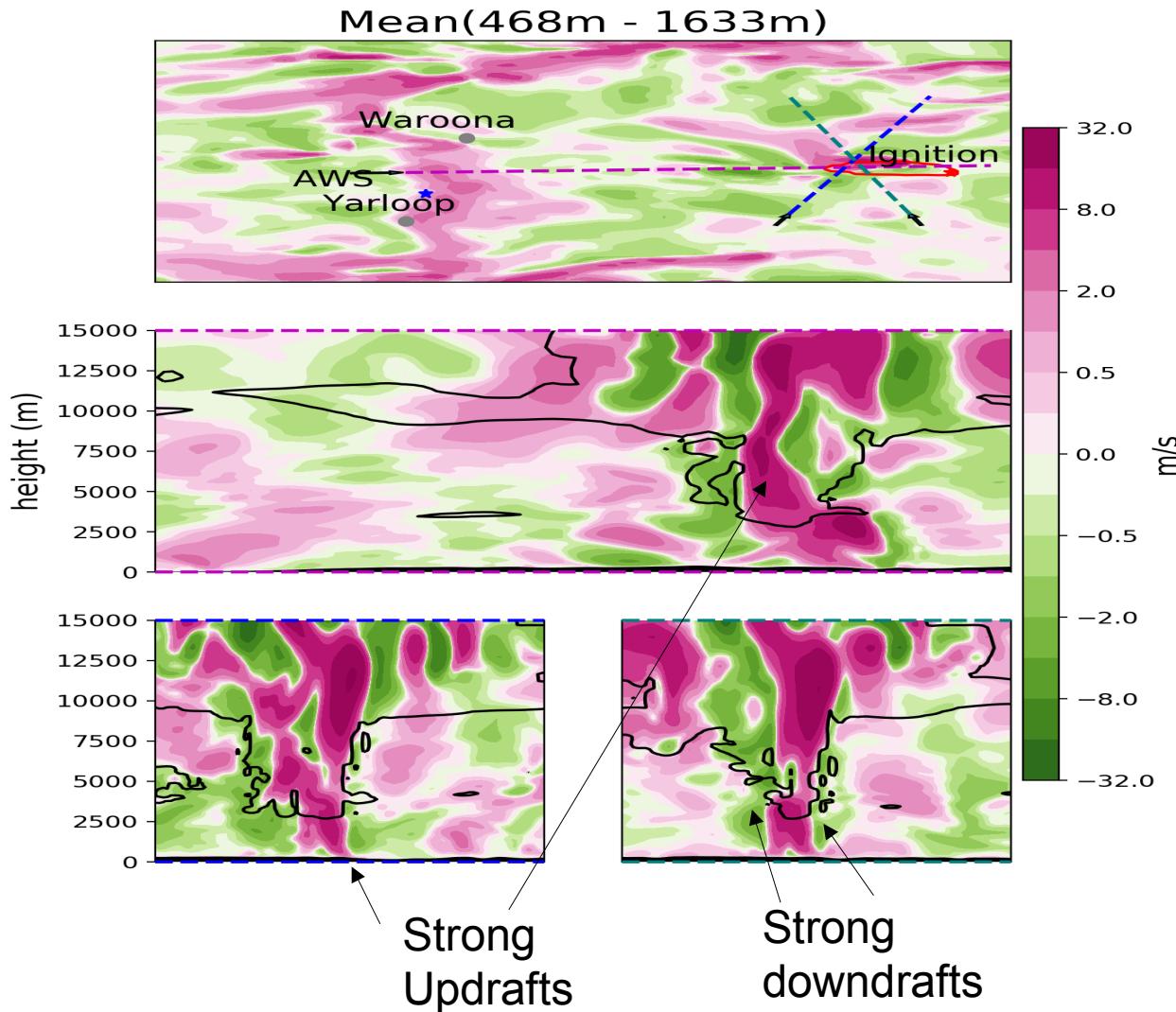


Pyrocumulonimbus (PyroCB)



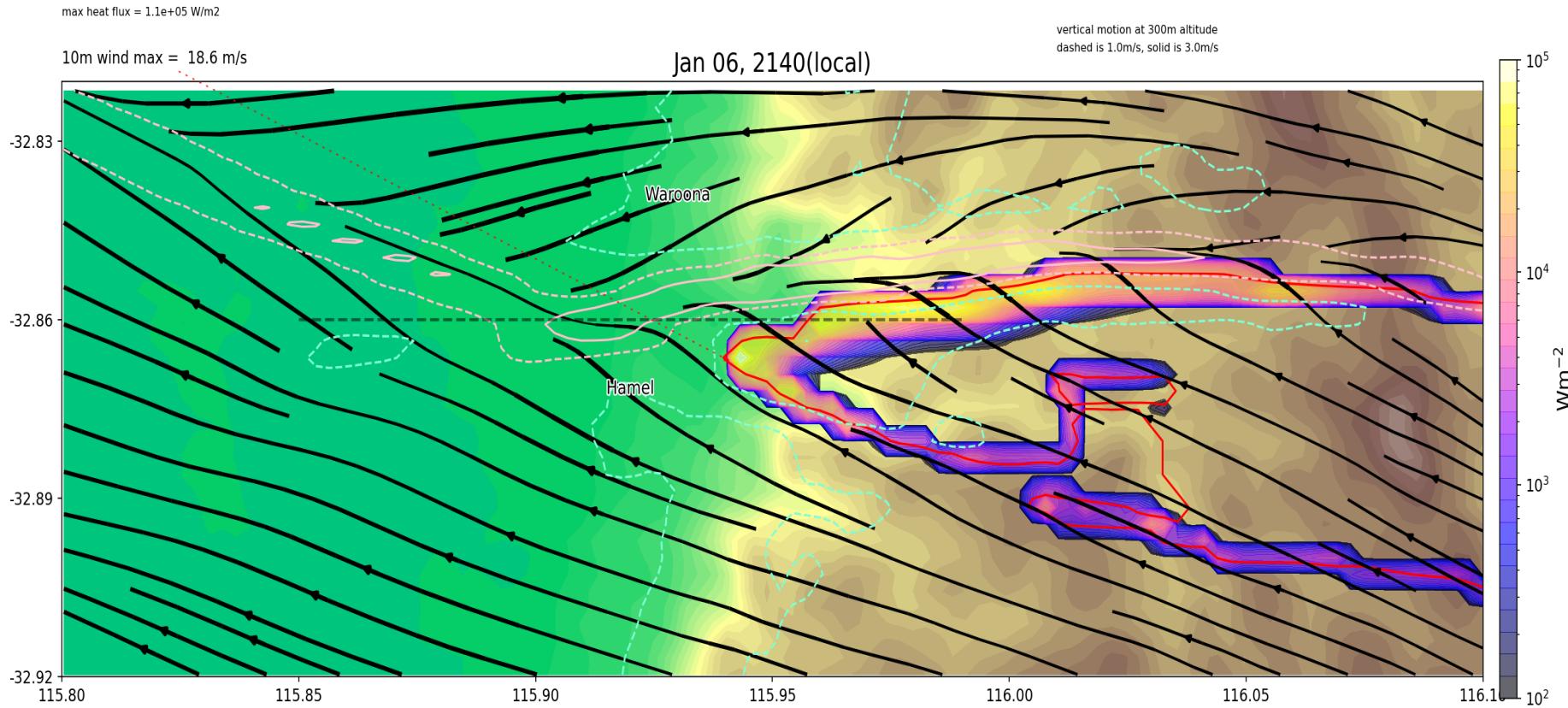
PyroCB Transect

Vertical motion 2016 Jan 06 07:01 (UTC)

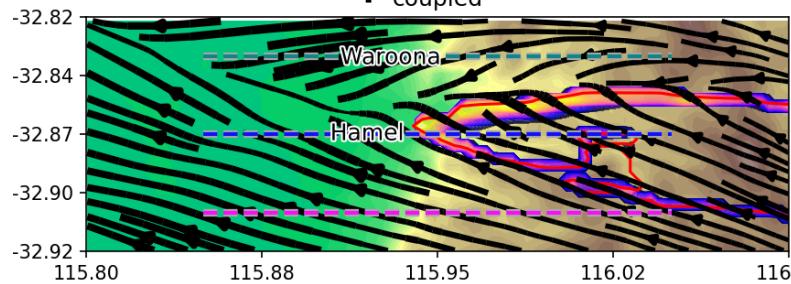


Emberstorm

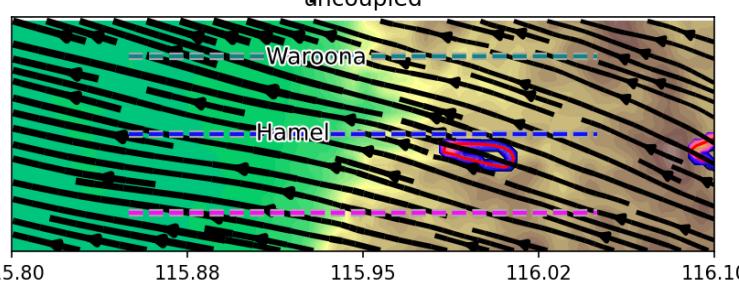
- Driven by high down slope winds with strong entrainment.
-
- Will be discussed in more depth by Mika



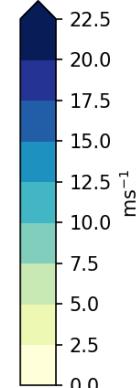
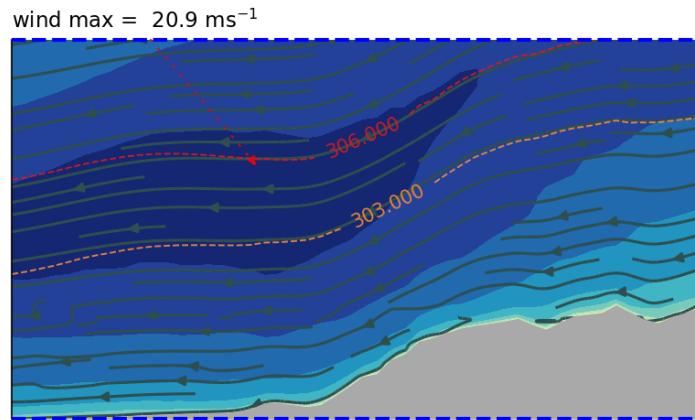
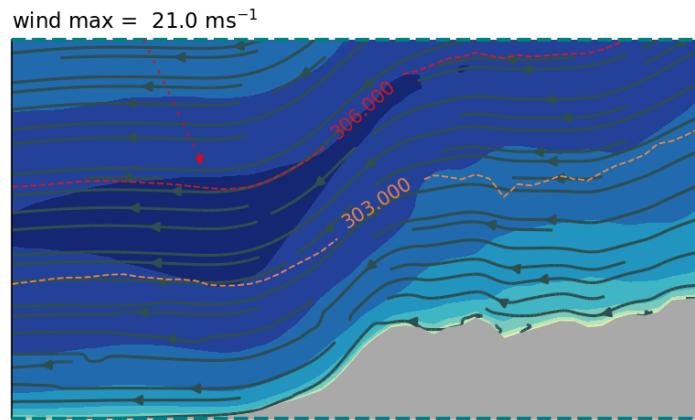
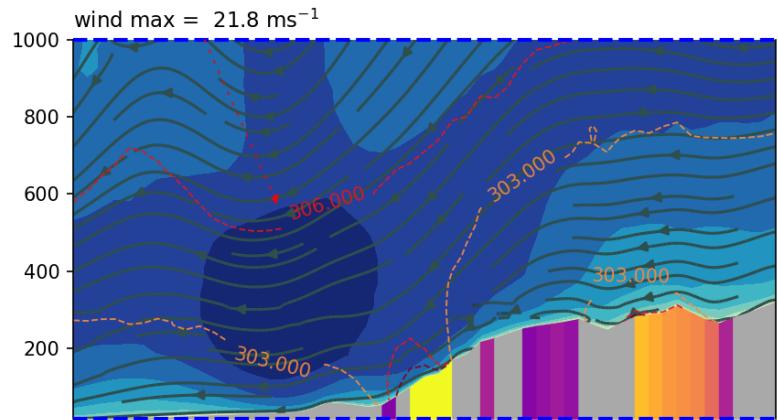
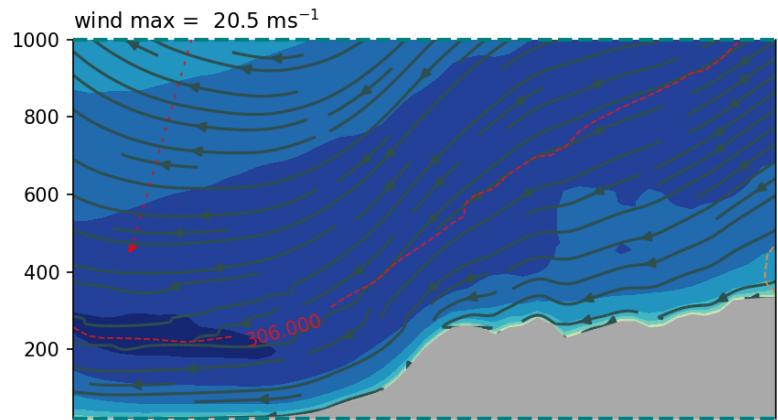
Coupled run



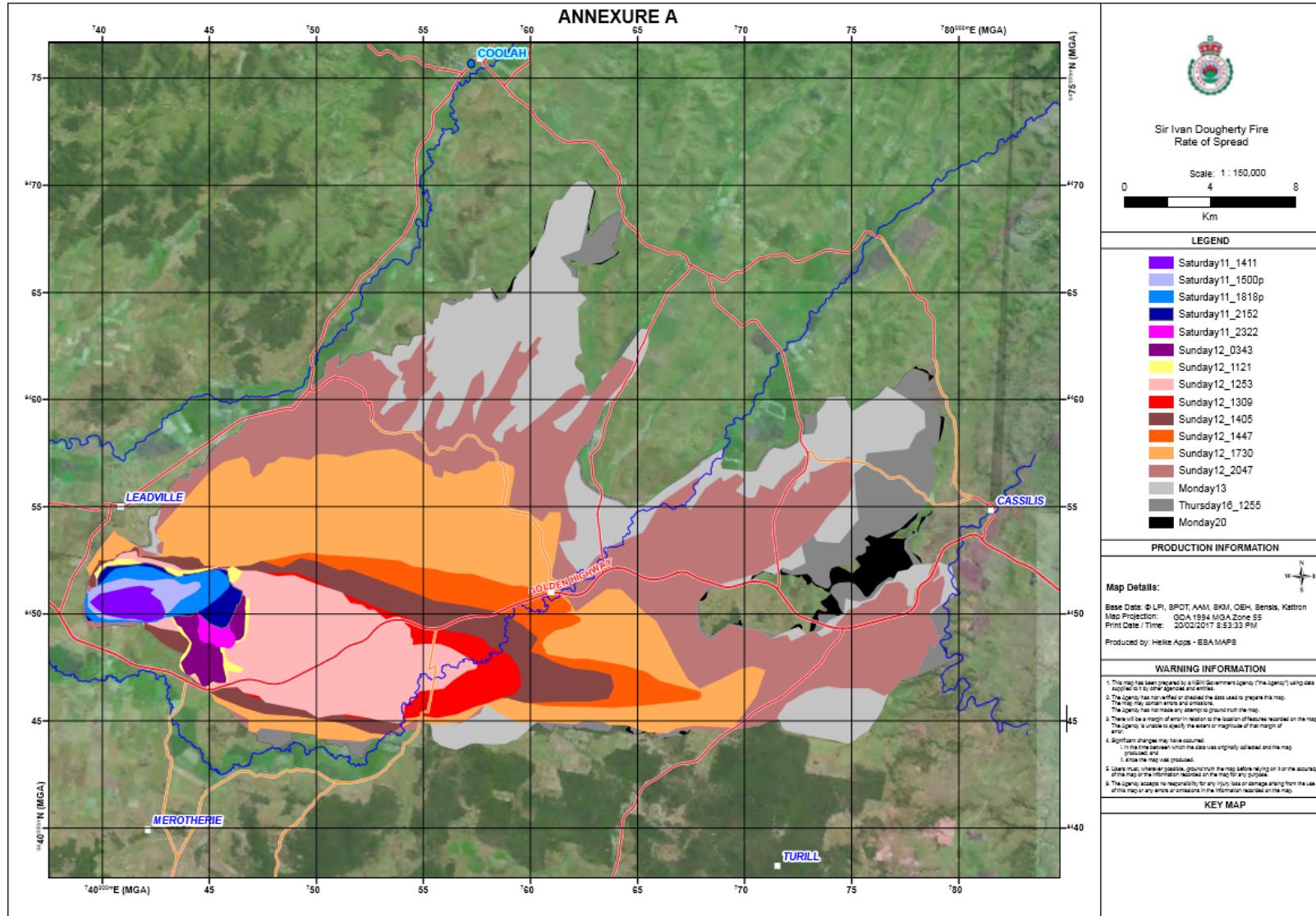
Uncoupled run



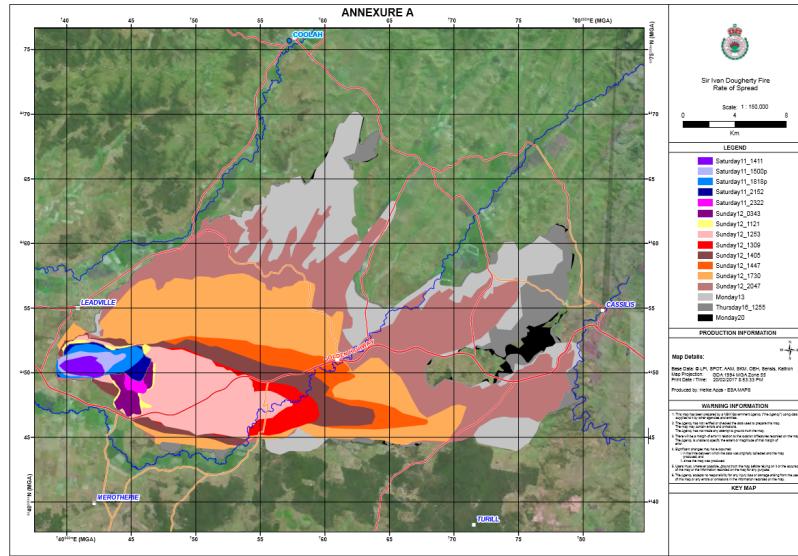
Horizontal wind Transects



Sir Ivan Spread



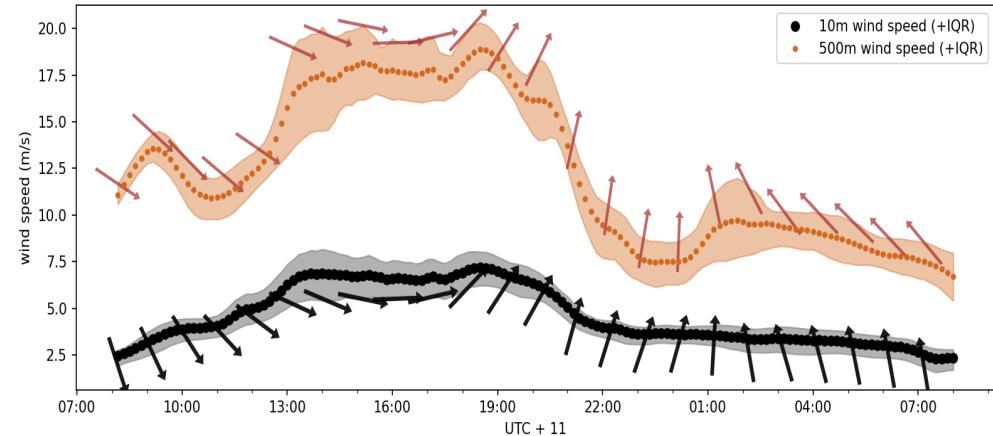
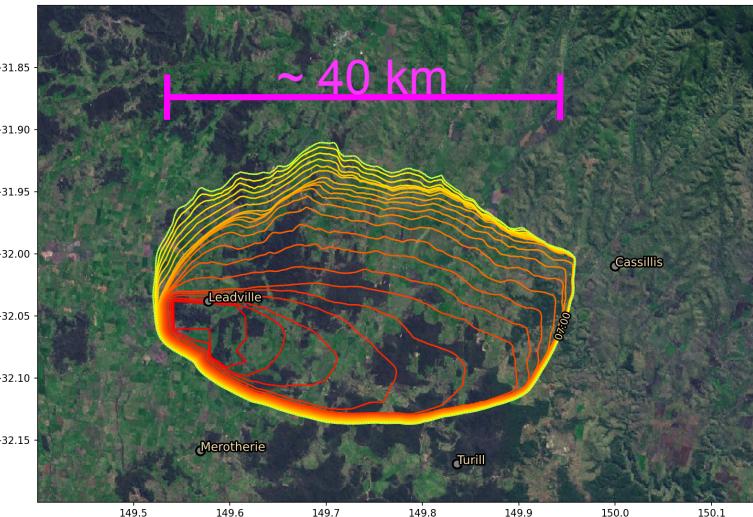
Sir Ivan Spread



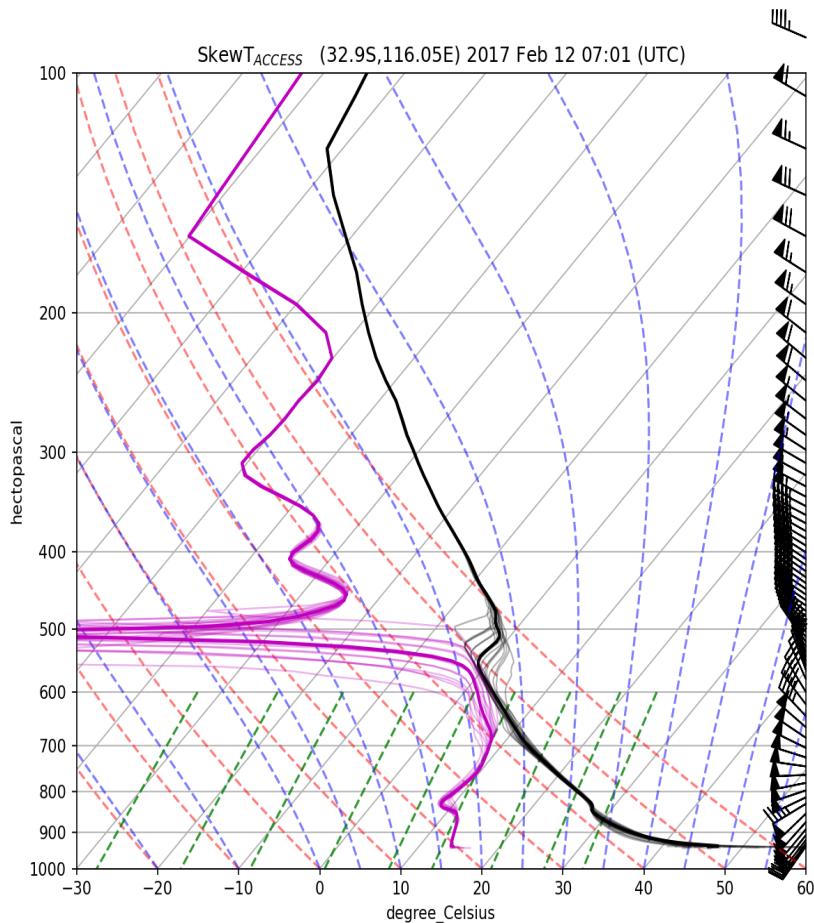
Spread is reasonably well captured

Bottom left: hourly firefront contours

Bottom right: area winds



Kevin's PFT



**Theoretical energy requirement
to form PyroCB**

$$PFT = C (Z_{fc})^2 U b_{fc}$$

PFT: PyroCB Firepower Threshold

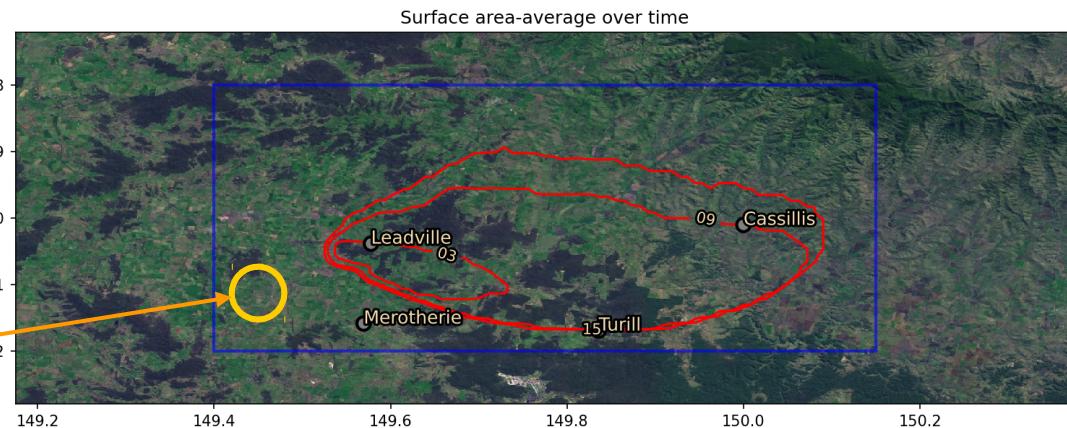
C : constant

Z_{fc} : free convection altitude

U : wind speed

b_{fc} : ML escape energy required

PFT compared against total model firepower

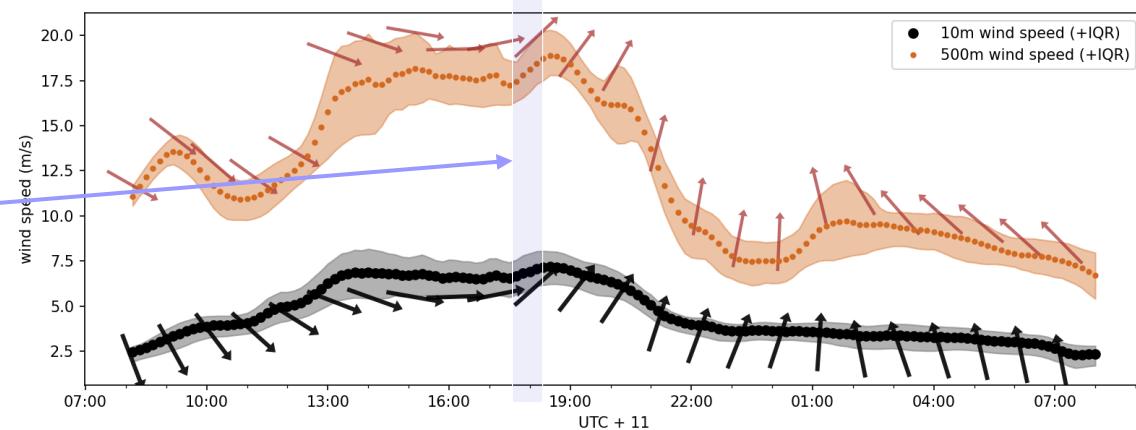
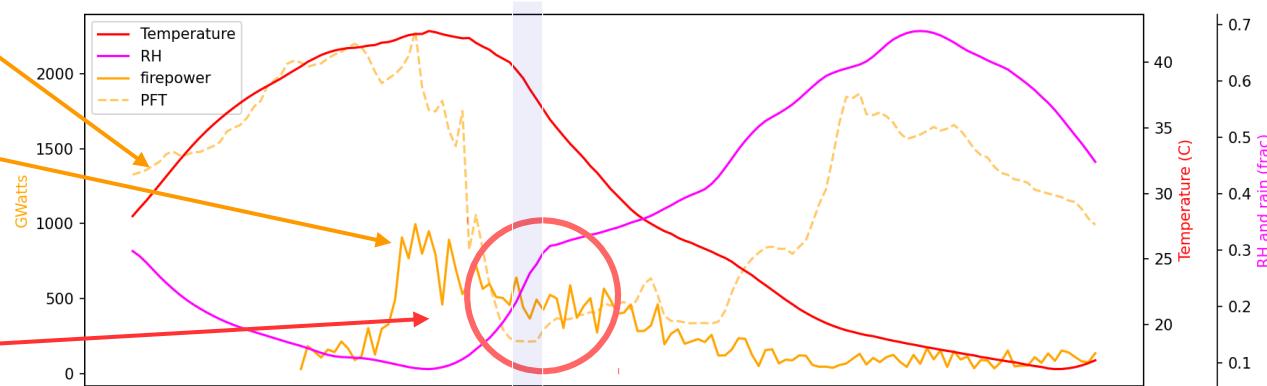


PFT calculated upstream of fire

Fire power

PyroCB window of opportunity

Pyrocumulous occurrence



Modelled Pyrocumulous

