This narrative from the Cougar Creek Fire near Plain Washington in 2018 demonstrates the value of WindNinja on a wildfire. The date of the event was August 22, 2018. - By Dan Borsum NWS Billings

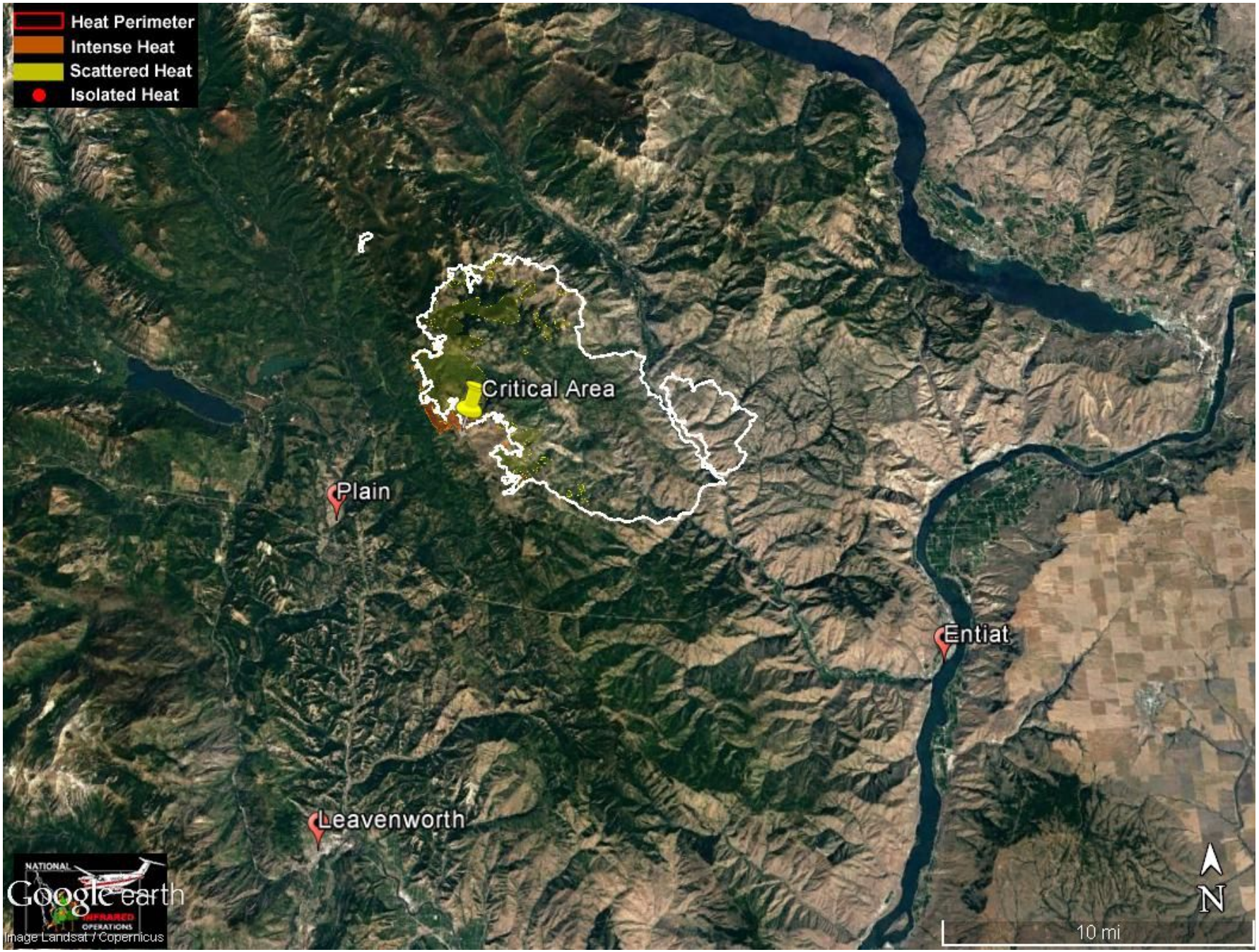
The Operations Section Chief comes into the Yurt just short of 2030 pm. He explains that the Division Supervisor cannot get down a piece of road they had been burning out because they are experiencing an east wind, even though the prevailing winds were strong from the west northwest.

Fire Behavior and IMET go to the map with operations and try to determine what could be going on. Initially it is thought that maybe enough column development has occurred to allow rotation in the column to cause erratic spotting. The IMET goes to run WindNinja to see if any other local effects show up.

A WindNinja run using Conservation of Mass and Momentum with a wind speed of 20 mph at 290 degrees. revealed that the exact location along the burn out was susceptible to an eddying or terrain driven turning of the wind. This method of computation was utilized due to the limited capacity of the IMET computer.

The information revealed by WindNinja gave the IMET confidence to tell operations that the wind reversal on the lee slope was not transitory and was going to be a concern for much of the night.

Slide 1 - General Location and terrain of the Cougar Creek fire near Leavenworth WA.


Heat Perimeter
Intense Heat
Scattered Heat
Isolated Heat
Critical Area
Plain
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Leavenworth
NATIONAL INFRARED OPERATIONS
Google earth
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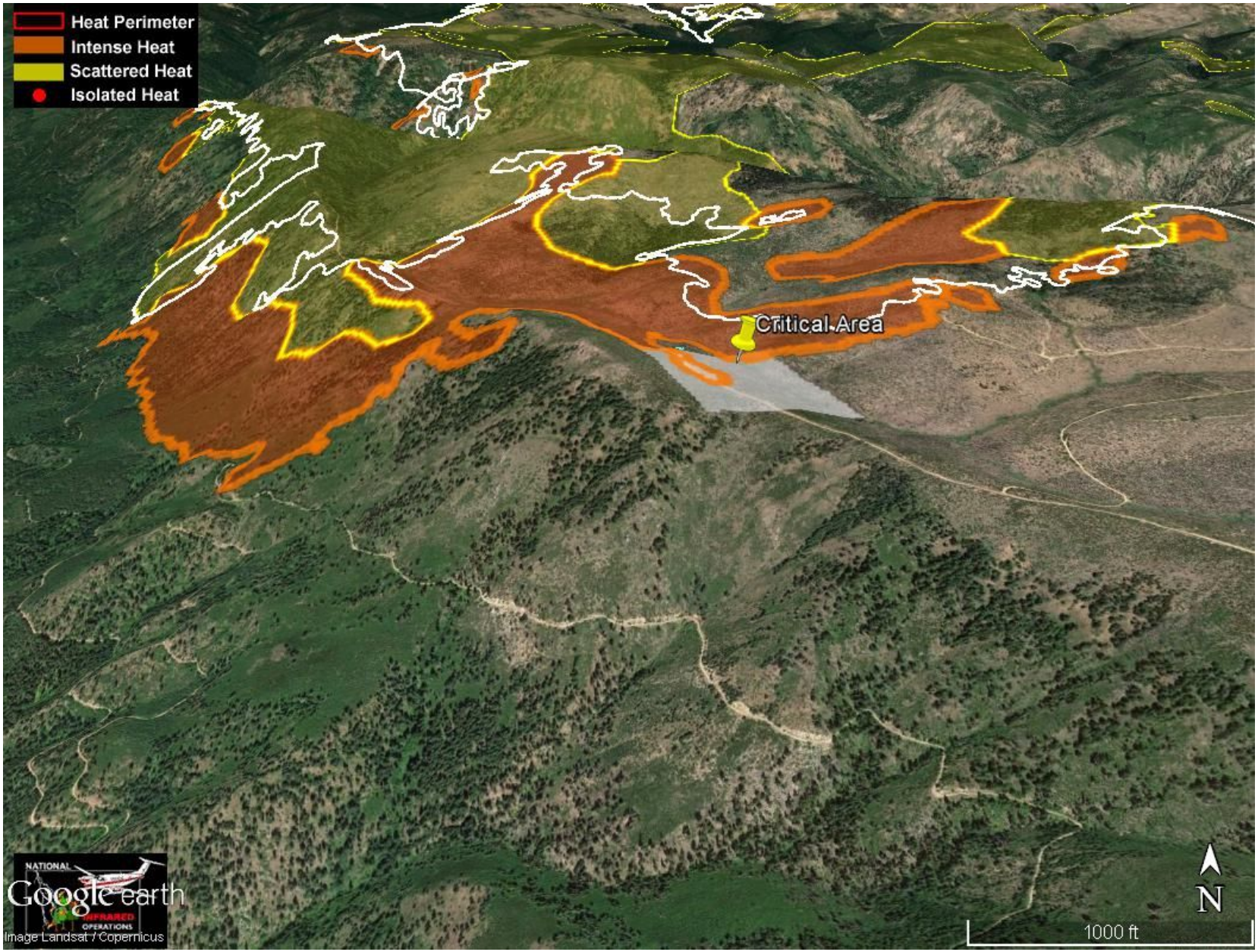
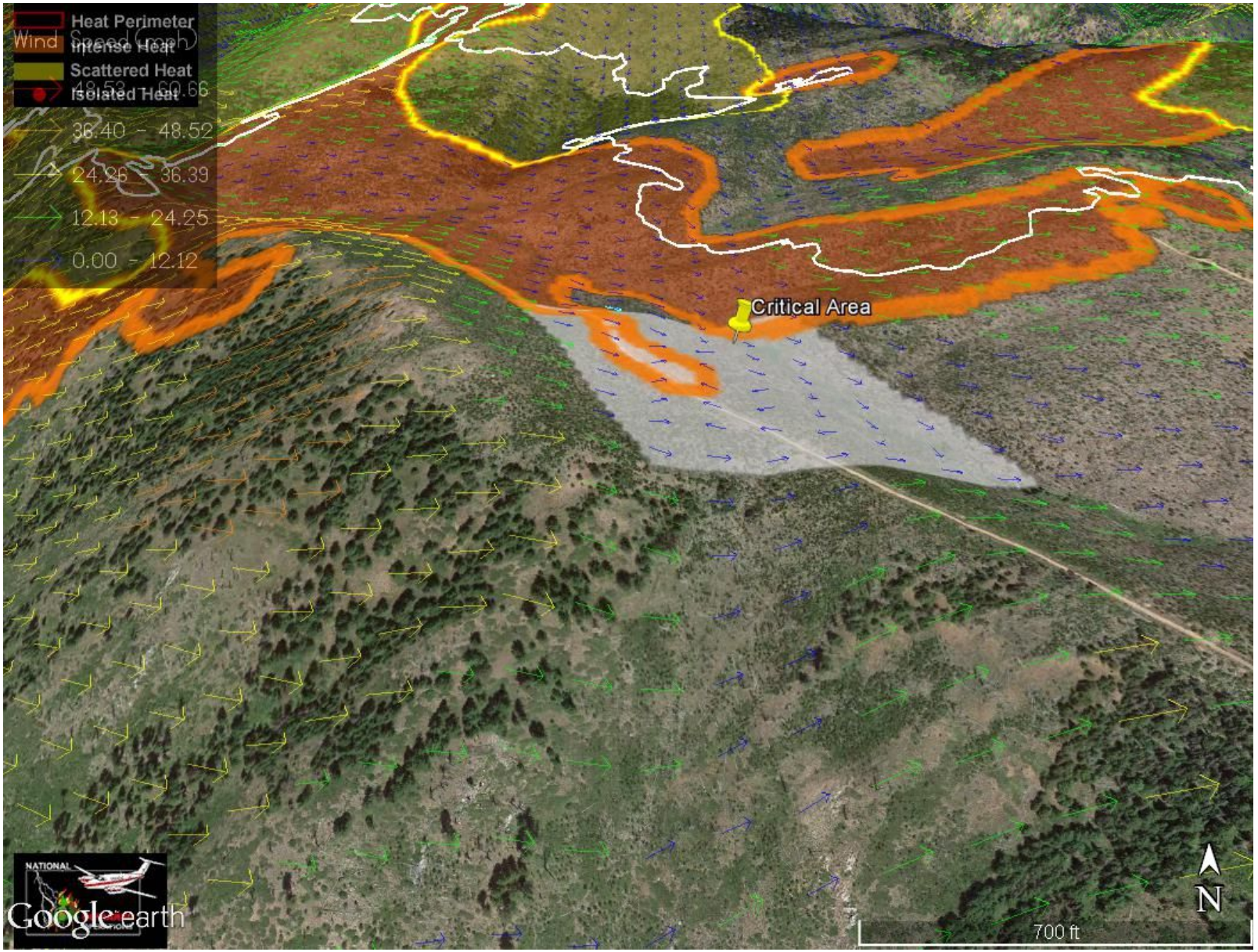
Slide 2 shows the area of concern with respect to the western portion of the fire. It also shows the relatively steep hillside the northwesterly wind was encountering upstream of the fire.



Slide 3 shows the stronger winds on the upwind side of the hill but the lower winds along the road where the burnout is being conducted.



Slide 4. A closer look (all arrows changed to yellow to aid visual), the channeling or eddying right along the road is visibile. To have winds 180 degrees from the prevailing wind is a very hard siutation to anticipate for forecasters and firefightes. WindNinja captured it.