

High Level Fire Lab

The second Rapid-Growth period of the High Level Fire: Synoptic Overview

For this lab, please:

1. Review the briefing report of the Chuckegg Creek Fire, High Level, AB fire 2019: (https://www.eoas.ubc.ca/courses/atasc413/cases/high_level_AB/timeline/briefing.html)
 - a. Identify the second period of rapid-fire growth. What time of the day did it occur? Is this a typical time we'd expect aggressive fire behavior? Why or why not?
 - b. From the report, what were some key operational (fire-fighting, or forecasting) challenges during this rapid-fire growth period?
2. Use NASA's worldview to examine the shape and growth of the wildfire during the period of aggressive fire behavior. (<https://worldview.earthdata.nasa.gov/>)
 - a. What direction did the wildfire grow?
 - b. What natural and human-made geographic features were at play during this period? How would they have affected the wildfire?
3. Use the Forecast Tools to analyze the **synoptic** weather conditions **prior** to this period of aggressive wildfire behavior (Int: 00Z Tue 28 May 2019). (<https://www.eoas.ubc.ca/courses/atasc413/fct/forecast.html>)
 - a. What key synoptic feature(s) were occurring?
 - b. How would these conditions affect the forest fuels?

4. Use the Forecast Tools to analyze the near-surface mesoscale weather conditions **prior** to this period of aggressive fire behavior (Int: 00Z Tue 28 May 2019). (<https://www.eoas.ubc.ca/courses/atsc413/fct/forecast.html>)
 - a. Describe the diurnal weather cycle for two days before.
 - b. How would this diurnal weather cycle affect the fuels?
5. Use NOAA's near-surface analysis tool and NASA's Worldview to understand the synoptic weather set-up on (00Z Tue 29 May 2019). (<https://www.wpc.ncep.noaa.gov/html/sfc-zoom.php>)
 - a. Describe the synoptic set up.
6. Use the Forecast Tools to analyze the synoptic weather conditions during the period of aggressive fire behavior (Int: 00Z Tue 29 May 2019). (<https://www.eoas.ubc.ca/courses/atsc413/fct/forecast.html>)
 - a. Describe the synoptic set up and evolution.
 - b. What kind of fire condition would we expect based on the synoptic weather alone?
7. Use the Forecast Tools to analyze the near-surface mesoscale weather conditions during the period of aggressive fire behavior (Int: 00Z Tue 29 May 2019). (<https://www.eoas.ubc.ca/courses/atsc413/fct/forecast.html>)
 - a. Describe the weather conditions for the 48-hours after initialization.
 - b. How would the conditions affect the wildfire behavior and growth?