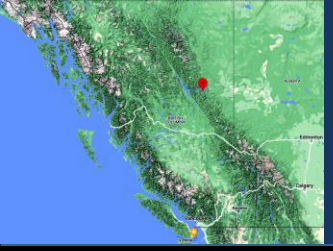
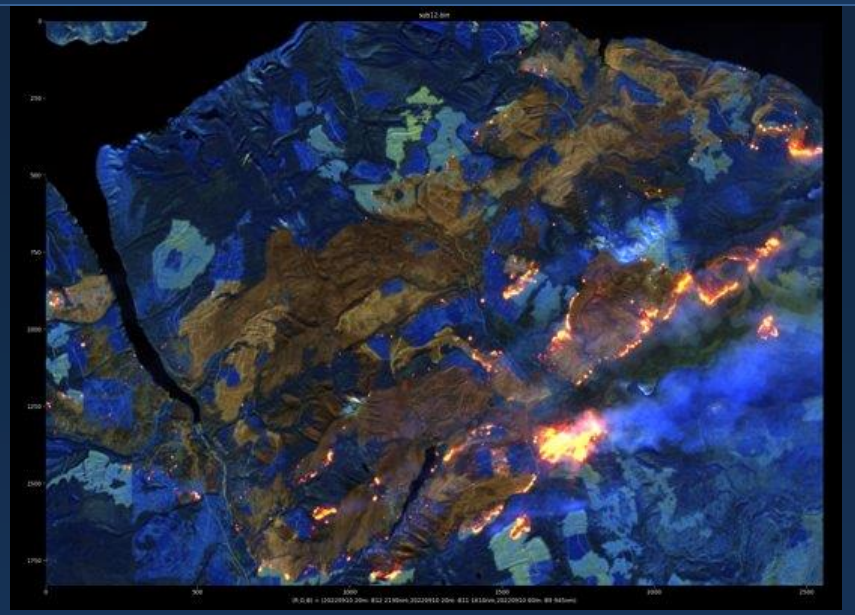


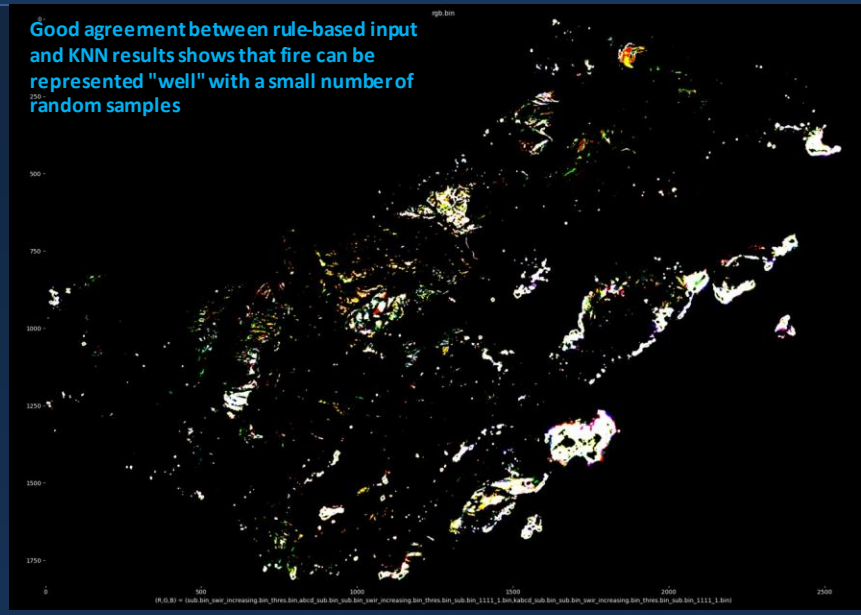
Operational Wildfire mapping in British Columbia using Sentinel-2

BC Wildfire Service

"Operational fire mapping in British Columbia using Sentinel-2 and Landsat" (Richardson et al) abstract accepted to CRSS 2023



Good agreement between rule-based input and KNN results shows that fire can be represented "well" with a small number of random samples



Battleship mountain (G72150) 20220910

Left:
RGB = (665, 560, 490) [nm]

- "Usual RGB"
- SWIR (middle) gives good smoke penetration

Middle:
Sentinel2 RGB = (2190, 1610,945) [nm]

- Short-wave infrared (SWIR)
- Rule-based method: "find bright/red"
- Rule = B/G> 1.1 && B/R > 1.1 && S> .35 && B> 2.e3
  where S is from HSV encoding
- Identify fire's spectral signature in SWIR

Right:
Machine/stat learn Approach
KNN inference; Train fraction = 0.09% on:

- Predictor (2190, 1610,945) [nm]
- Response: Rule

Above: RGB = (Rule, KNN inference (K=1), KNN inference (K=11))

- Exploring whether we need more complex A.I.

Next steps incl. Operationalizing Fuels monitoring with Sentinel-2