Supplemental Materials: for **"**Impacts of an Intense Wildfire Smoke Episode on Surface Radiation, Energy and Carbon Fluxes in Southwestern British Columbia, Canada"

I.G. M[c]Kendry[1], A. Christen[2], S.-C. Lee[1], M. Ferrara[1], K.B. Strawbridge[3], N. O'Neill[4], A. Black[5]

Figure S1: Sites - clockwise from top left: Burns Bog, Vancouver-Sunset, UBC, Buckley Bay

Figure S2: arrival of smoke on 5 July looking north across Vancouver compared to clear day (Photo courtesy if Elie Bou-Zeid, Princeton University)

AMDAR:
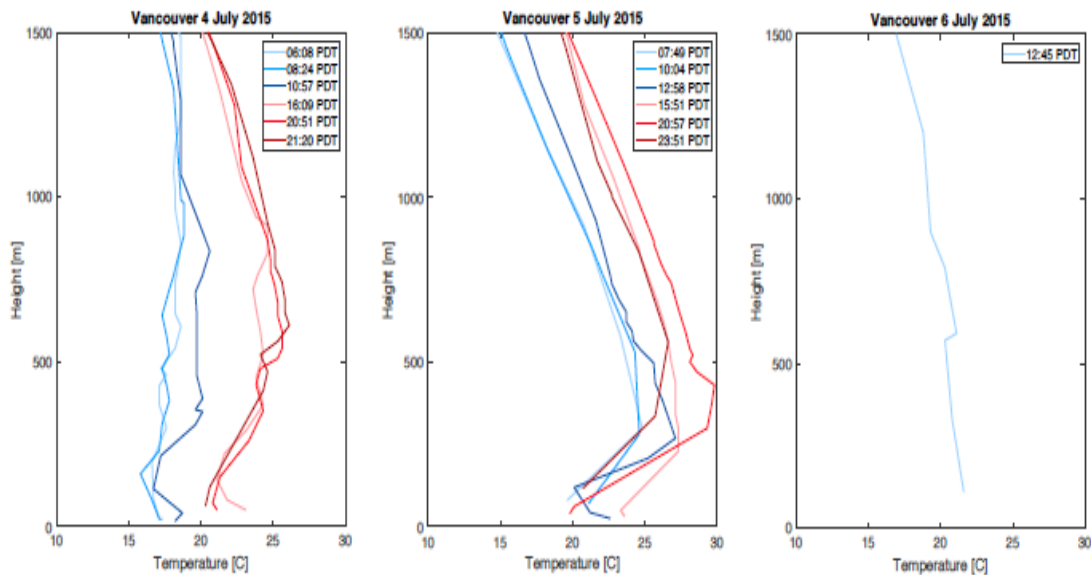
Figure S3 – vertical profiles from AMDAR

HYSPLIT Modelling of the Event

Dispersion was modeled in order to confirm the smoke source using the NOAA Air Resources Laboratory HYSPLIT (HY-brid Single-Particle Lagrangian Integrated Trajectory) model Version 4 (https://ready.arl.noaa.gov/HYSPLIT.php). HYSPLIT 4 is the current version of a complete system for computing simple air parcel trajectories to complex dispersion and deposition simulations for any location and date (depending on data availability) using a variety of standard data input products (e.g. the NCEP Reanalysis 1948–present). For this case, the concentration fields were calculated for 24 hours for a fire source located at Elaho, covering 10000 ha and started at 0000 05 July 2015 UTC. Concentrations were averaged through a 1500m layer AGL with meteorology driven by the EDAS40 dataset.
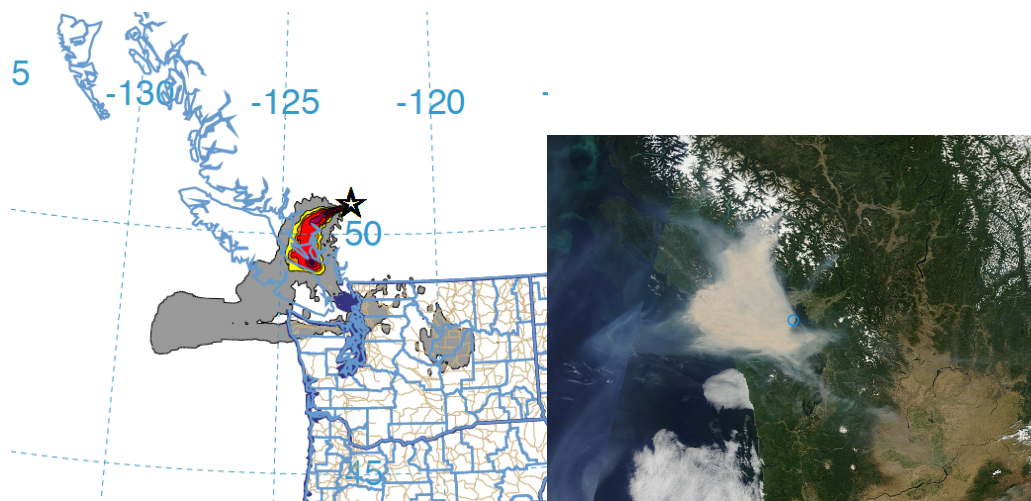
Figure S4: Modelled and observed 5 July: HYSPLIT run – 10,000 Ha, EDAS, 1500 m averaged 24 hour started 0000 5 July, UTC