Materials:

Wind, Temp and RH sensor

Important PRE Variables:

Fuel moisture meter = general MMD8P

Relative humidity sling psychrometer

Sizes of fuels (hours)

Wind speed & direction

Species - white oak and douglas fir

Bark content

Important POST Variables

Distance traveled

Number of holes burned into wrap

Size and weight of firebrands

Shape of firebrands

Project mission

1) Measure the size of embers and rate of production for different fuels and environmental conditions.

2) Determine the environmental and fuel conditions which control ember production.

3) Quantify ember temperatures at and downstream of the source of generation.

4) Establish a methodology bridging data and correlations from small-scales to forest-scales.

5) Correlate ember size, shape and density to transport distance, deposition rate and ember

deposition temperature.

6) Establish a link between ember sizes, shape, and density to the inherent capacity to ignite fuels.

Testing procedure

Prepare

1. Record fuel characteristics
   1. Determine fuel moistures
      1. Use moisture meter at 5 points on piece of fuel
   2. Determine physical sizes
      1. Use calipers to measure the diameter at 5 points
   3. Weight of all burning material (rate per pound?)
2. Record environmental characteristics
   1. Wind speed
   2. Relative humidity
   3. Temperature
3. Metal tub
   1. Put screens into tub
   2. Put in water
   3. Cover with wrap
   4. Place in designated pattern

During

Post

1. Extinguish fire.
2. Collect cold firebrands - sort
3. Take off wrap and place onto camera jig - take photo
4. Collect hot firebrands - sort for oven

Is the pre post overall weight important? Post weight will be difficult since fire needs to be extinguished, which introduces water to fuel.

Ask about oven capabilities

Ask about hours, training day one, day two.

What needs to be done:

Make a camera jig to take similar photos of saran wrap … Phone?

Colored PVC saran Wrap

Wind detector

Need mesh?

Logistics of photos. Resolution, scale indicator?

Test image recognition

How many burns are we shooting for

Ideas for first burn to establish pan placement

Establish where the embers land - place many trays randomly-ish

Can you see the ir camera being useful for this?