**BlueSky Playground Oregon Smoke Dispersion Exercise**

***Rx Burning in the wildland urban interface (WUI) of Bend, Oregon***

1. Open your browser and navigate to BlueSky Playground <https://tools.airfire.org/>
2. **LOGIN or CREATE ACCOUNT**: If you don’t already have an account, click the link to create an account, and then login.
3. **Click on “Create New Emissions Scenario” link.**
	1. Give your emissions scenario a name, for example, “Rx410 Exercise”,
	2. Select “Broadcast Burn”
	3. Enter 44.0 and -121.4 for latitude and longitude.
	4. Enter 120 acres for the fire size.
	5. Click on the “Go” button. Note: This takes a moment to run because it is running FCCS, CONSUME, and FEPS in the background.
	6. **Question:** What is the total fuel loading in tons? What is the consumption in tons? (Hint: click on the “View Totals” button.)
4. **FUELS:** Click on the “Fuels” tab.
	1. Notice that FCCS Fuel Bed #28 from Map is selected (Ponderosa Pine Savanna).
	2. **Question:** What is the total fuel loading in tons/acre?
	3. Click on the “FCCS Fuelbed” button.
		1. In the dropdown window, select FCCS Fuelbed 27 (Ponderosa pine – Two needle pine - Juniper forest), and click the “Apply” button in the lower right corner.
		2. **Question:** What is the total fuel loading in tons/acre?
		3. Click on the “Discard Changes” button.
5. **MOISTURE**: Click on the “Moisture” tab.
	1. Select “Dry” from the drop down window, and click on “Apply.”
6. **CONSUMPTION**: Click on the “Consumption” tab.
	1. **Question:** What is the total consumption in tons/acre?
7. **TIMING**: Click on the “Timing” tab. We’re not going to burn 120 acres in one hour. For the purposes of this exercise, we’ll burn 30 acres/hour for four hours.
	1. Click on the “Add a section” link three times.
	2. In Section #2, enter 30 acres, and select 11AM from the drop down window. Notice the acres in Section 1 have decreased to 90, for a total of 120 acres.
	3. In section #3, enter 30 acres, and select 12PM from the drop down window
	4. In section #4, enter 30 acres, and select 1PM from the drop down window. Click the “Apply” button.
8. **EMISSIONS**: Click on the “Emissions” tab.
	1. **Question:** How many tons of PM2.5 are emitted?
9. **NOTES (aka DISPERSION)**: Click on the “Notes” tab.
	1. In the lower right, click on the “Create Dispersion” tab.
	2. Enter a name, such as “Rx410 Dispersion.”
	3. Under “Meteorological Data Source” Select “Pacific Northwest 4km WRF”.
	4. Click the “Next” button
	5. Click on the calendar icon
		1. Select May 1, 2016.
		2. Select a run length of 2 days.
		 **STOP HERE STOP HERE STOP HERE**
		3. Click on the “Go” button.
	6. After a minute or so, you should see that the model run has successfully started. It may take up to 30 minutes or so to complete the dispersion model run. At this point, you can log out, and login later to get the results, or you can wait for the model run to finish.
	7. When the dispersion run is complete, there should be a green checkmark next to the name. Click on the name of your dispersion run.
10. Viewing your dispersion output – Playground
	1. If you are looking at the dispersion output using the Google Maps display in Playground, note that the display defaults to “Daily Max Concentration.”
	2. Click the “Hourly Output” button under data layer to view hourly concentrations.
	3. Click the “Animate” box under the time slider bar to step through the hours.
11. Viewing your dispersion output – Google Earth
	1. Clicking on the Google Earth link in the upper right section of the page to download the file.
	2. Once it has downloaded, open it in Google Earth.
12. **Question**: At about 4PM on May 1, where are the highest smoke concentrations?
13. Continue stepping through the output to about 4AM on May 2.
**Question**: What do you see?