

Best Practices for Preparing PM Wildfire EE Demonstrations

Exceptional Events Workshop

St. Louis, MO

Feb. 28, 2024



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

Sara M. Strachan, PhD
Senior Scientist
Technical Services

PM wildfire EE demonstrations at Idaho DEQ

- Total number of concurred wildfire PM days in Idaho since 2012 = **74**
- IDEQ EE team past and current
 - Rick Hardy
 - Mary Anderson
 - Jake Wolf
 - Kimi Smith
 - Aislinn Johns
 - Mary Walsh

1. Read the Rule

- Before the guidance.
- Learn the elements.
- Use the elements to structure your demonstration.
- Determine how the rule applies to your specific situation.

(3) *Submission of demonstrations.* (i) Except as provided under paragraph (c)(2)(vi) of this section, a State that has flagged data as being due to an exceptional event and is requesting exclusion of the affected measurement data shall, after notice and opportunity for public comment, submit a demonstration to justify data exclusion to the Administrator according to the schedule established under paragraph (c)(2)(i)(B).

(ii) [Reserved]

(iii) [Reserved]

(iv) The demonstration to justify data exclusion must include:

(A) A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s);

(B) A demonstration that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance or violation;

(C) Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times to support the requirement at paragraph (c)(3)(iv)(B) of

this section. The Administrator shall not require a State to prove a specific percentile point in the distribution of data;

(D) A demonstration that the event was both not reasonably controllable and not reasonably preventable; and

(E) A demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event.

(v) With the submission of the demonstration containing the elements in paragraph (c)(3)(iv) of this section, the State must:

(A) Document that the State followed the public comment process and that the comment period was open for a minimum of 30 days, which could be concurrent with the beginning of the Administrator's initial review period of the associated demonstration provided the State can meet all requirements in this paragraph;

(B) Submit the public comments it received along with its demonstration to the Administrator; and

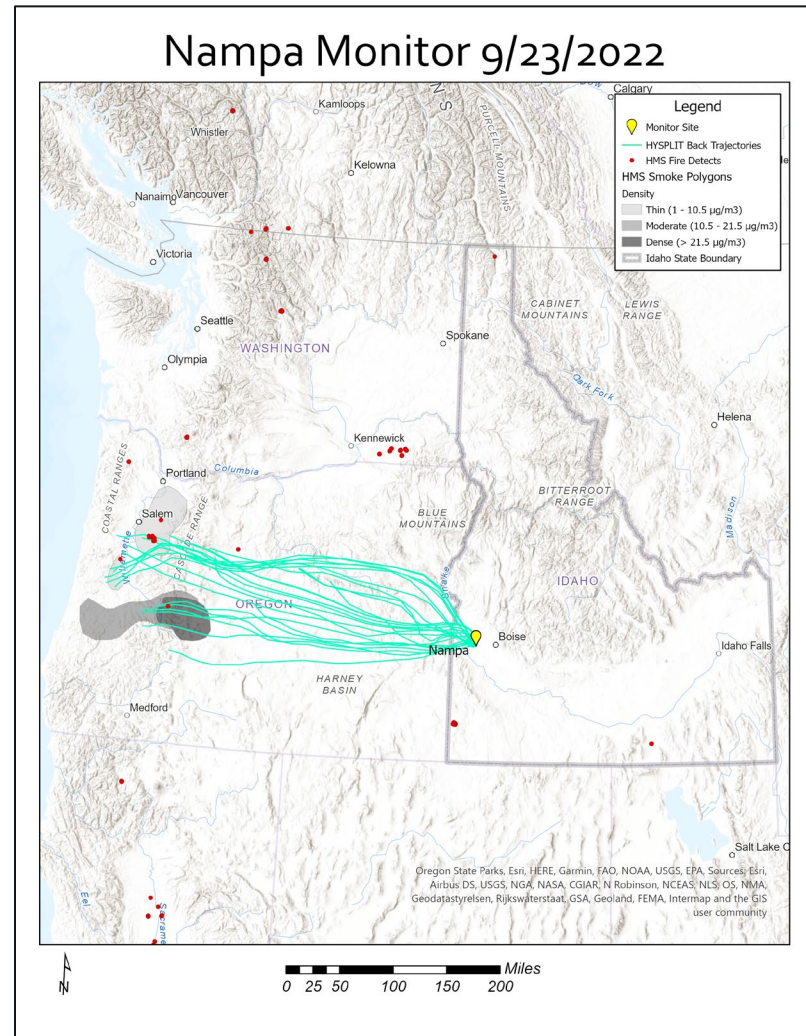
(C) Address in the submission to the Administrator those comments disputing or contradicting factual evidence provided in the demonstration.

2. Know Your Audience



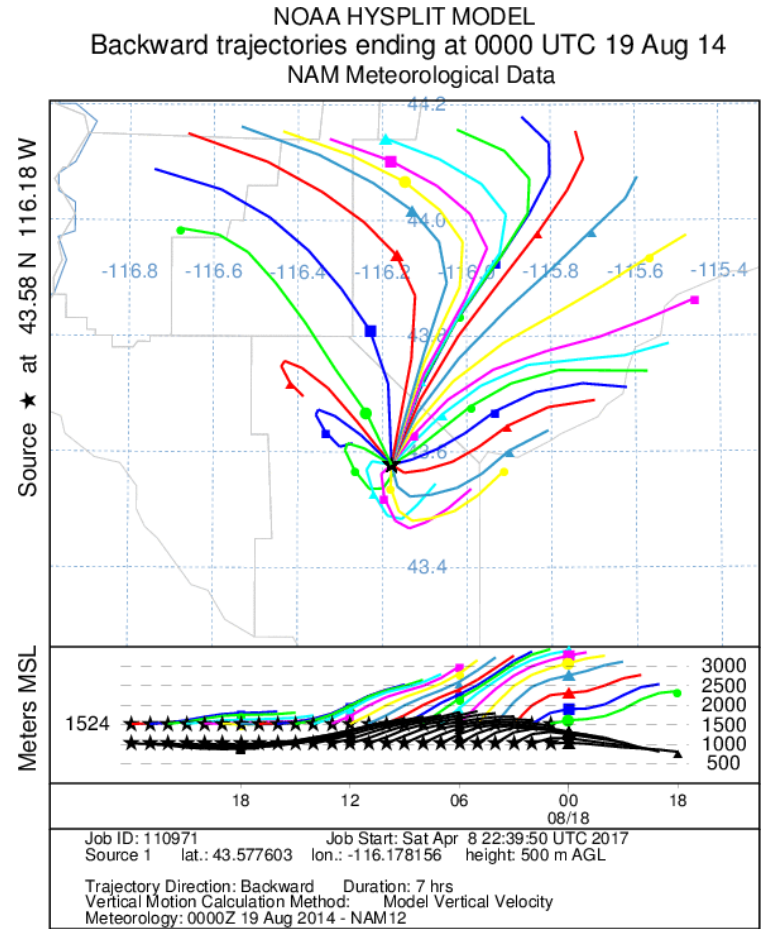
3. Clear Causal is the Crux

- HMS smoke polygons cover 24 hours of source emissions.
 - Multiple satellites over many time steps.
 - Get data here:
<https://www.ospo.noaa.gov/Products/land/hms.html#data>
- Hourly HYSPLIT back trajectories cover 24 hours of transport to the monitor.
 - Smoke transport over the entire day of monitor exceedance.
 - Create trajectories here:
https://www.ready.noaa.gov/HYSPLIT_traj.php



4. Respect HYSPLIT

- Check your results.
- Do some testing.
- Determine starting heights to stay within mixed layer.
- Choose best meteorological data for your situation.
- Take advantage of training.



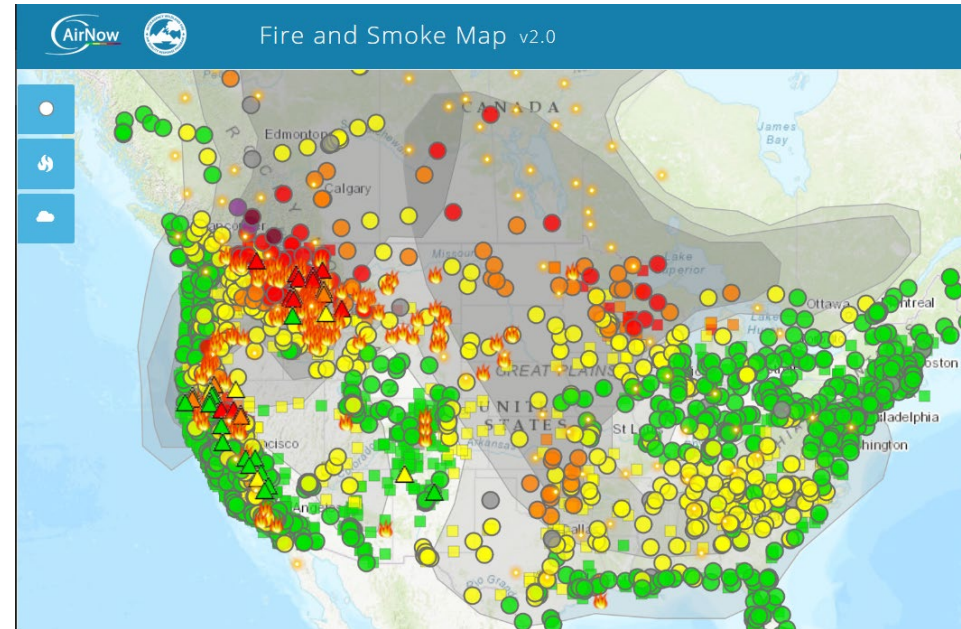
5. Collaborate!

- Share the work.
- The Conceptual Model can be a good place to start for a shared source area.
- Collaboration helps you *and* the EPA reviewer.



6. Monitor the Wildfire Season

- It's hard to remember what happened 3 years later.
- Maintain situational awareness through available websites ([Idaho Wildfire Smoke Portal](#)).
- Archive needed data (e.g., [InciWeb](#)).



Questions?



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

Sara.Strachan@deq.idaho.gov