How Will Georgia-Florida Wildfires Affect Regional Air Quality Planning?

Wes Younger

Georgia Environmental Protection Division

Wildfires And Air Quality Planning

- How can we show attainment of air quality standards or goals if unusual events impact our monitoring data?
- Can we be held accountable for what we can’t control?

Wildfires And Air Quality Planning

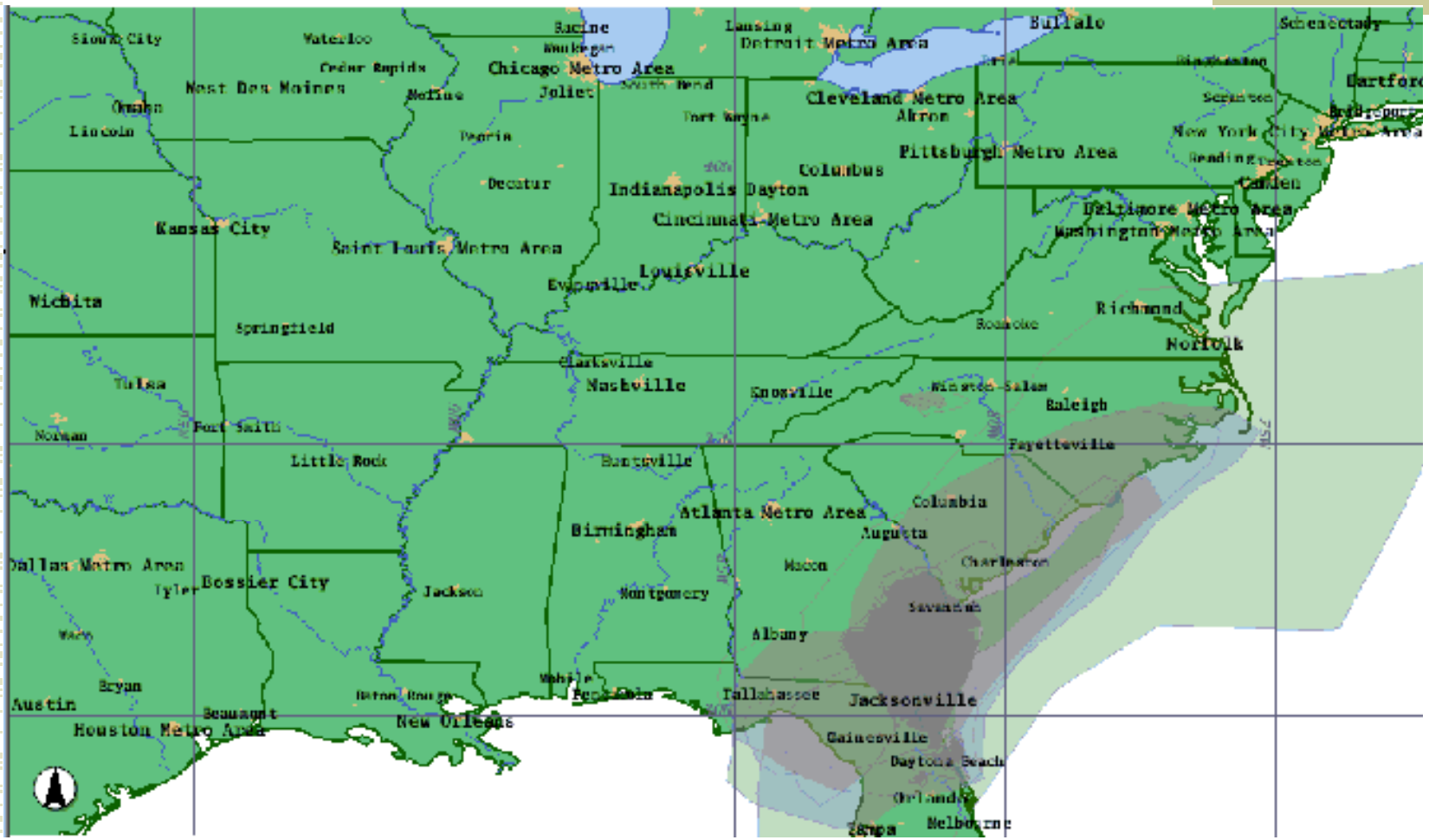
- How can we show attainment of air quality standards or goals if unusual events impact our monitoring data?
- Can we be held accountable for what we can't control?
- *Not if we really can't control it. Apply for exceptional event status so the event won't contribute to nonattainment*

Wildfires And Air Quality Planning

- CAA is intended to protect public health. Does the source of the pollution matter if people still have to breathe it?
- *Depends on our ability to control the source. State must take reasonable actions to protect public health during the event, and if the event is truly exceptional, the public will be willing to curtail activity to prevent exposure.*

May 2007 Fire Event- Which Airsheds Affected?

May 2nd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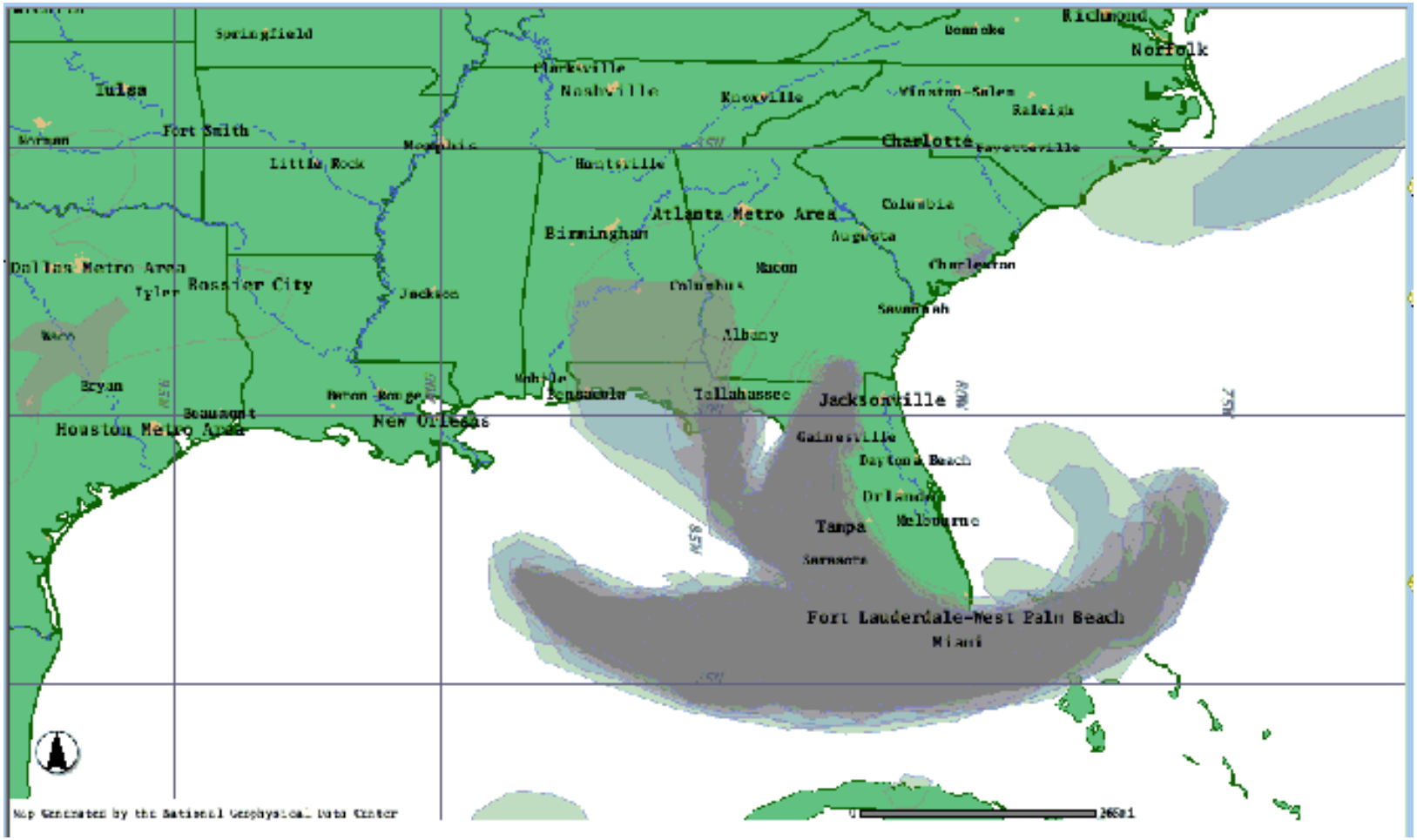
May 11th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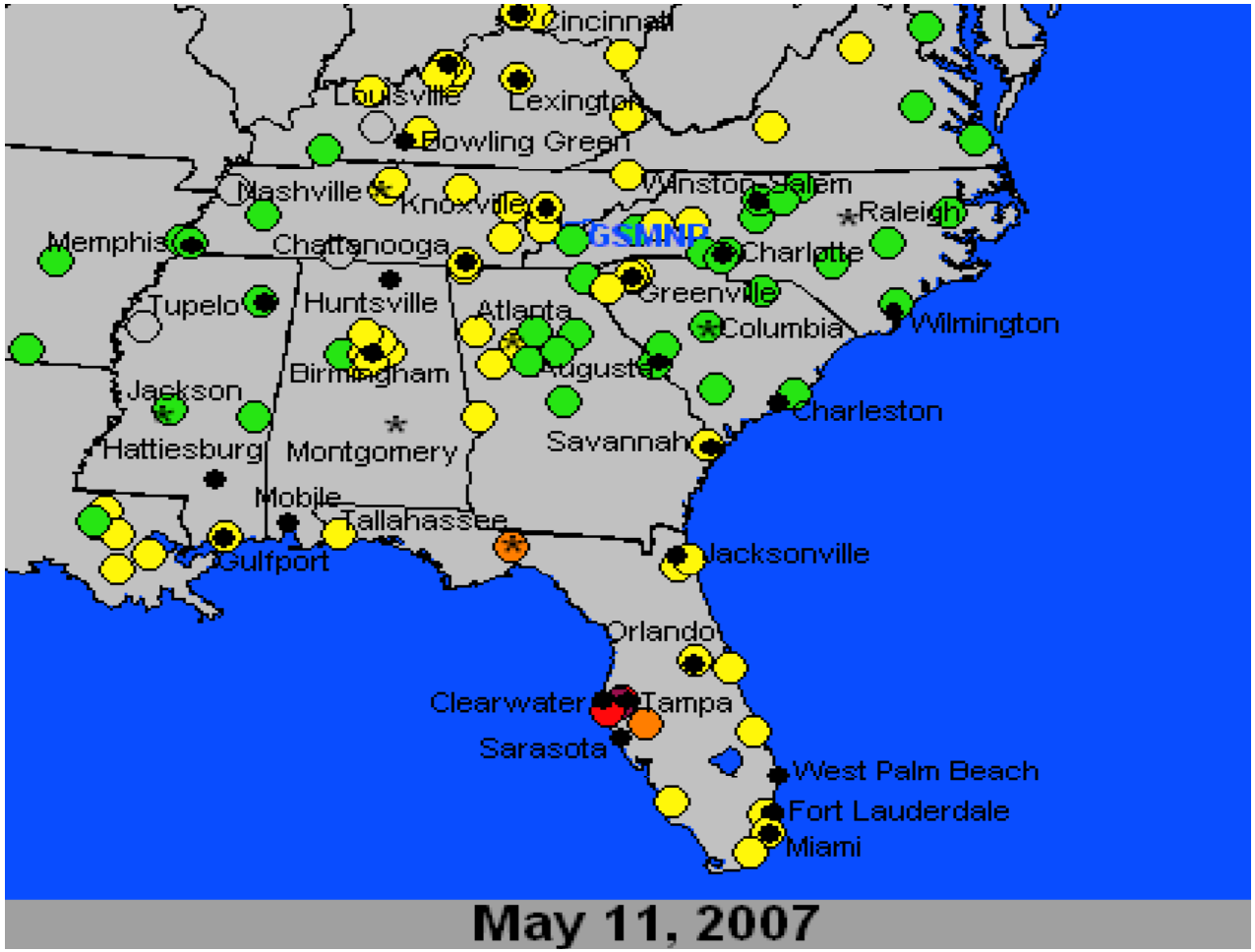
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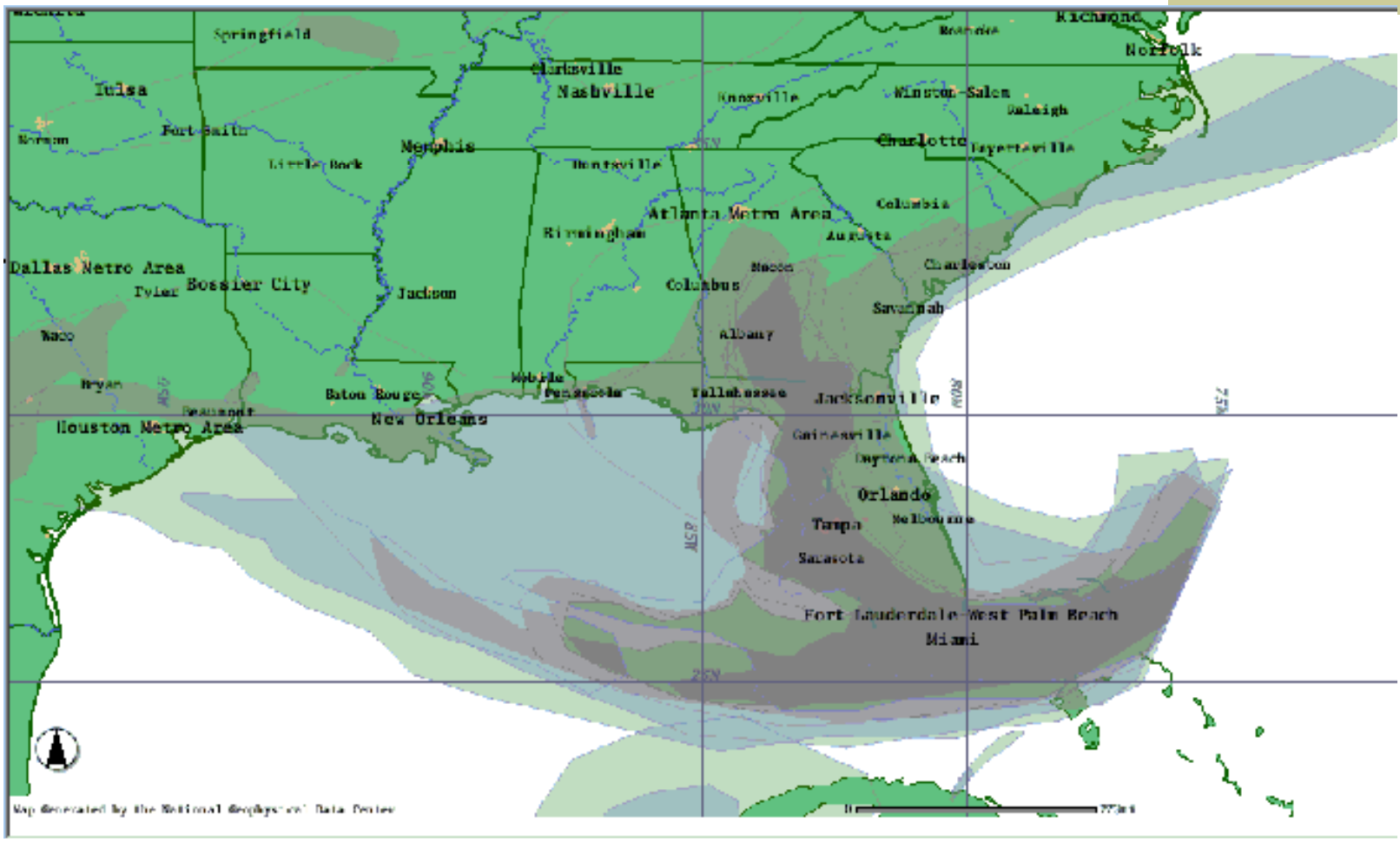
May 12th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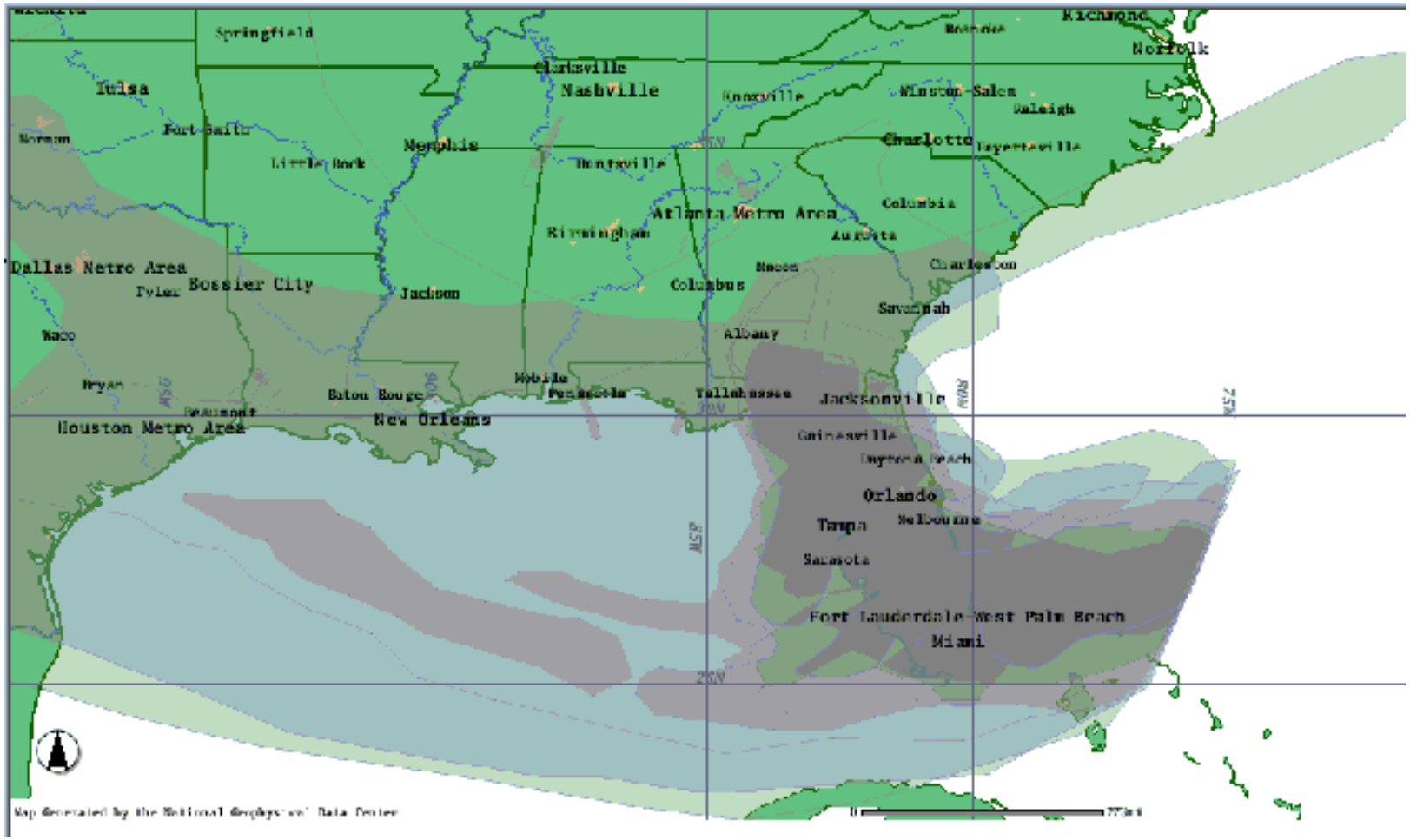
May 13th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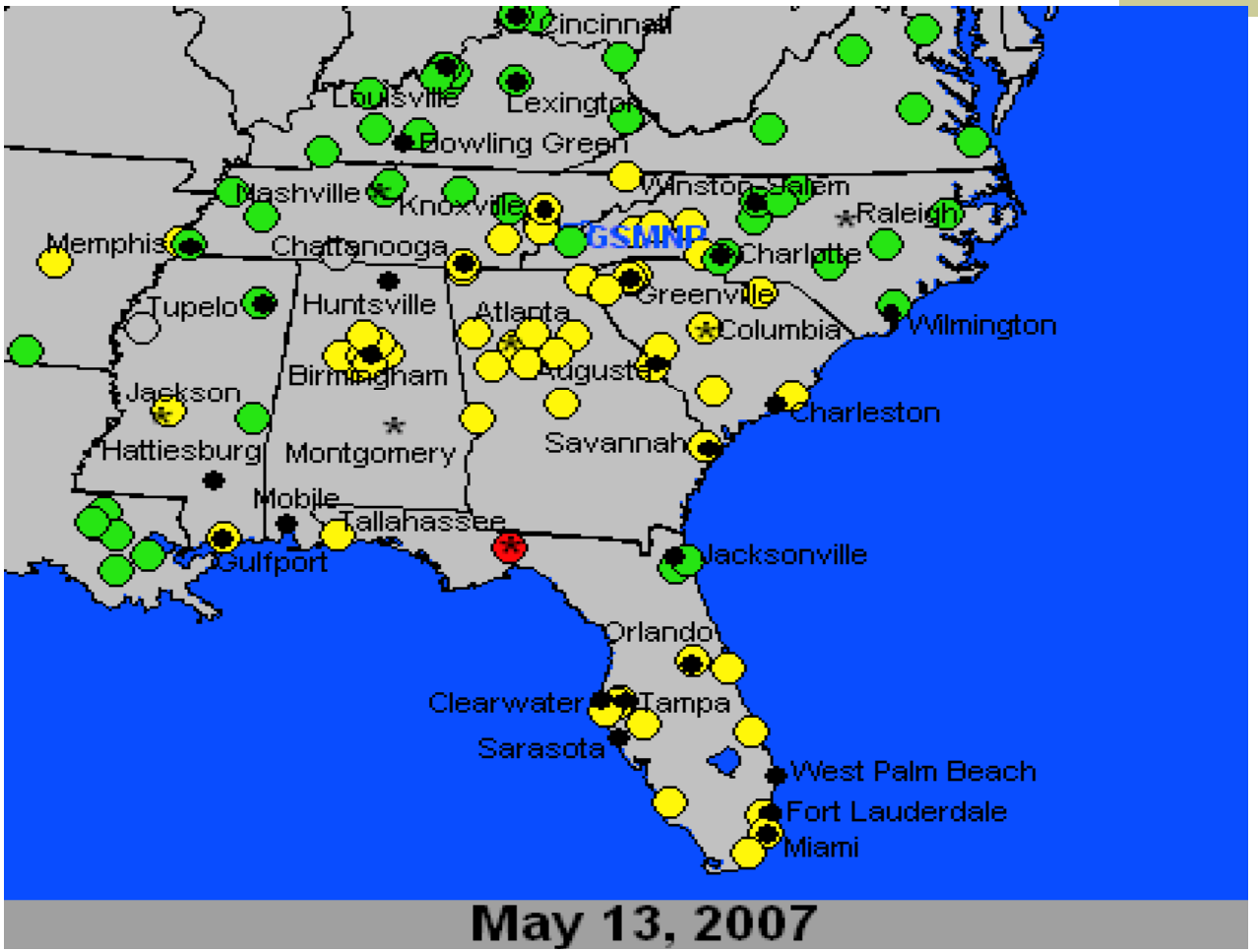
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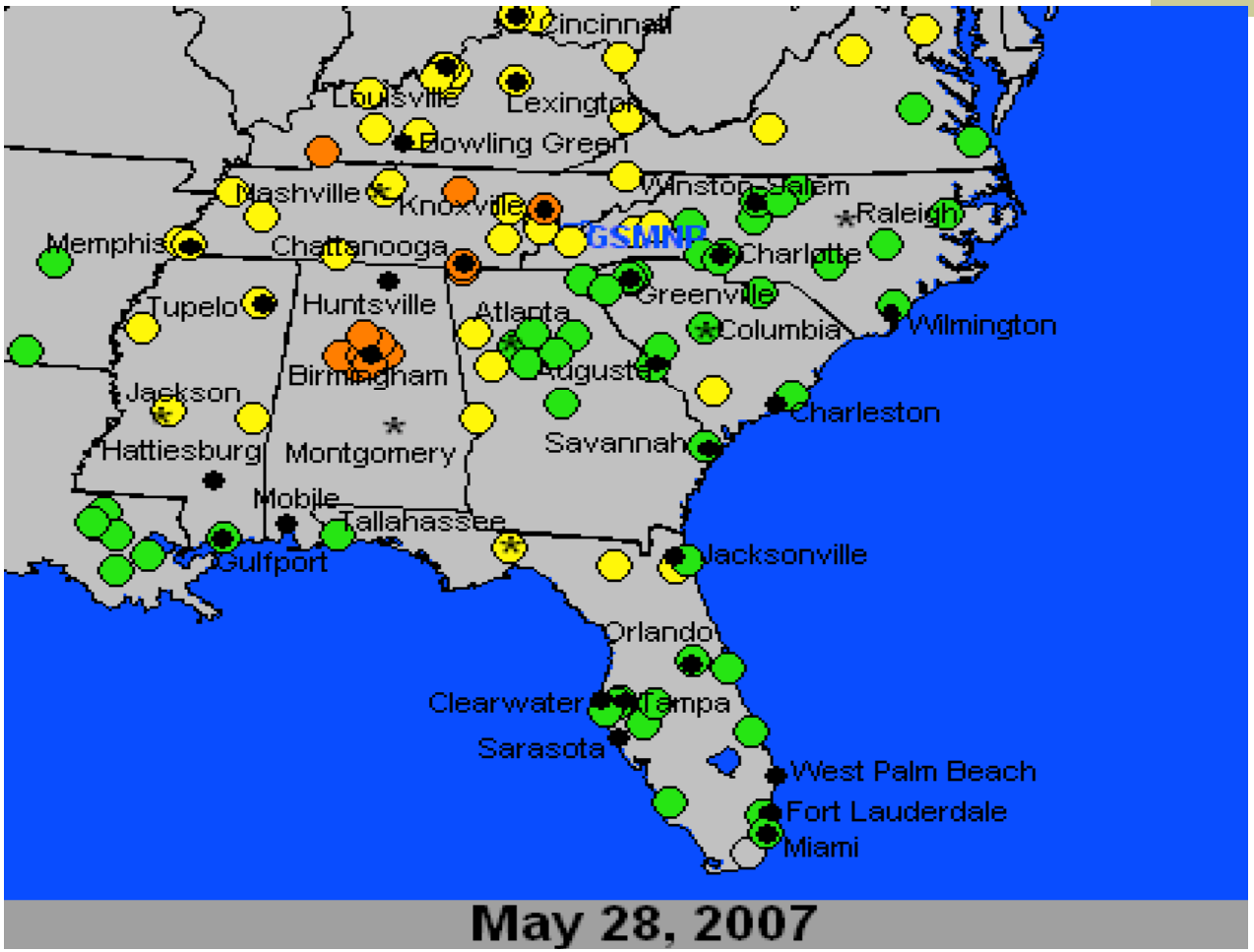
May 28th-29th



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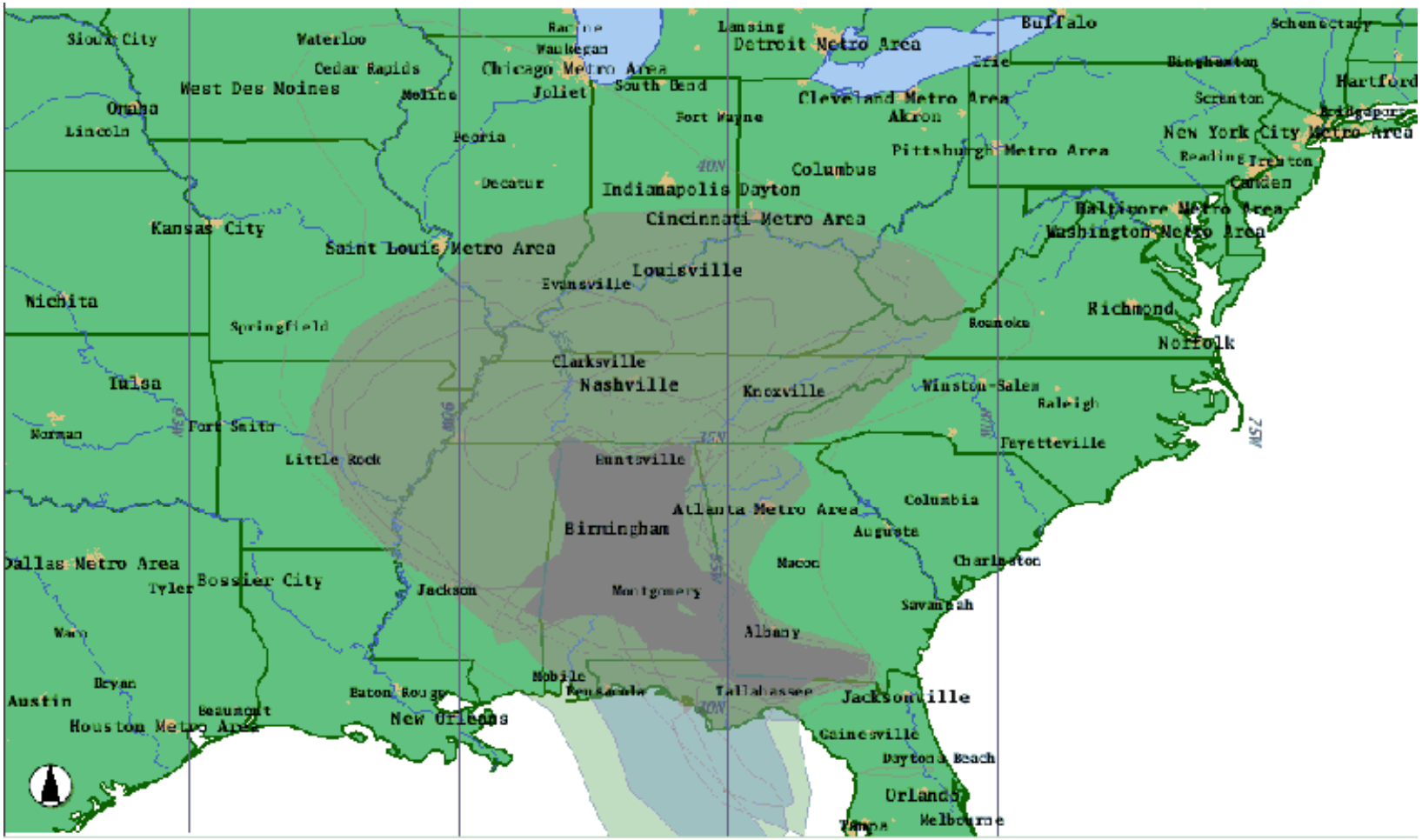
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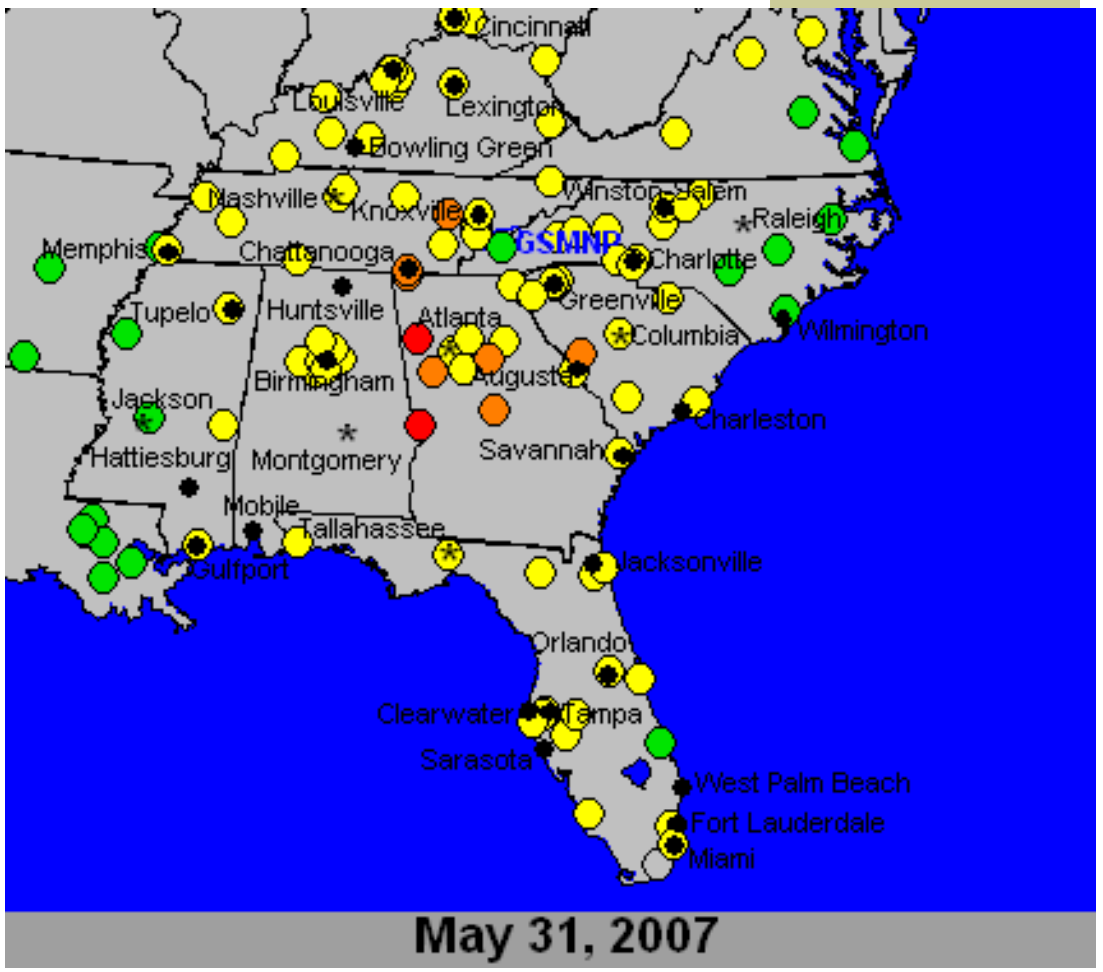
May 31st

5/31: All continuous monitors (non-FRM) in Georgia except Augusta exceeded daily standard



How Much Does It Matter?

- Moderate to severe effects on local and regional air quality for more than a month
- Primary effect is on $PM_{2.5}$ levels
- Standards are driven by annual average and 98th percentile daily value, so a few bad days might not spoil the bunch…
- But most inland metro areas in Southeast are borderline. Columbus, GA's attainment status depends on a single day's data now

It Matters A Lot!

- The new $PM_{2.5}$ daily standard is 35 $\mu g/m^3$ for the three year average of 98^{th} percentile; annual mean 15 $\mu g/m^3$
- During this fire event many non-FRM monitors in Georgia had 5-8 exceedances. How many of those were seen by FRMs? Not yet known.
- Magnitude of the observed concentrations can be extreme (>100 $\mu g/m^{3)}$ even at great distance from the source

It Matters A Lot!

- Ad hoc near-fire monitor exceeded 1000 µg/m^3 during some hours; daily values approached 350 µg/m^3
- Resulting AQIs would be 300-400 5/1, 5/2, 5/17
- Consider effect on attainment if there had been an official monitor near the fire and there were no mechanism to exclude that data

It Matters A Lot!

- The difference between counting or excluding a few exceptional days like these will be the difference between Attainment and Nonattainment in many metro areas- or one level of nonattainment severity
- Huge ramifications for severity and cost of required control strategies

Can These Events Be Excluded?

- Yes. EPA Exceptional Events Policy (40 CFR §50.14)
- Days in exceedance of a standard may be excluded from regulatory decisions where the exceedance would not have occurred "but for" the effect of the event
- Monitoring agency petitions EPA for consideration of the event

How Can These Events Be Excluded?

- EPA will consider events in exceedance of any applicable NAAQS
- Events between $PM_{2.5}$ daily and annual standards (15-35 $\mu g/m^3$) may also be considered if they contribute to annual standard violation
- If EPA concurs, the day's data is excluded from consideration (not adjusted)

How Can These Events Be Excluded?

- Event usually must be unlikely to recur
- Not reasonably controllable or preventable
- "Clear causal" relationship must be demonstrated by submission of evidence to EPA
- Value not within normal fluctuation or background for the area
- *State must take reasonable action to protect public health during the event*

"Reasonable Action to Protect Public Health"?

- Prompt public notification of the problem
- Public education on how to reduce exposure
- Implement "appropriate" protective measures, possibly including additional controls on contributing anthropogenic sources during the event

So What Do We Do?

- Immediate:
  - If an event occurs, regardless of source, take reasonable steps to protect the public from the immediate health hazard.
  - Begin gathering potential documentation of the event- some evidence is hard to track down later

So What Do We Do?

- Before 7/1 of the following year:
  - Flag event data in AQS and provide initial description of the event to EPA
  - Flag first, ask questions later. Flags are free and if you decide you don't need EE status later, you don't have to follow through.
  - Special "catch-up" period for 2004-2006 $PM_{2.5}$ data- flag by 9/1/2007

So What Do We Do?

- No later than 12 months before an attainment decision is to be made, or 3 years after the event's calendar quarter (whichever comes first):
  - Petition EPA for concurrence to exclude the event
  - Public notice and comment process required before submitting

Demonstration of Evidence to EPA

- Relatively easy to document: wildfire, escaped controlled burning, natural events, fireworks displays with national or cultural importance
- Trickier: controlled biomass burning- only approvable with a Smoke Management Plan (or similar practices) in actual use and no good alternative to burning is available
- Specifically forbidden from exclusion: meteorological inversion, stagnation events

Demonstration of Evidence to EPA

- Submit evidence to demonstrate the causal relationship between event and resulting data
- Amount of evidence needed depends on the event, but typically includes
  - that an event occurred
  - source-receptor relationship (space and time)
  - pollutant concentrations at affected vs. nonaffected locations

Prescribed Burning in Georgia

- Red-cockaded woodpecker habitat management- burn every three years
- Mechanical fuel reduction isn't a good alternative for the habitat, and we can do smoke management

Prescribed Burning in Georgia

- Forest Service shows areas with “0-35” year natural burn recurrence
- EPA has signaled flexibility on the “unlikely to recur at a particular location” requirement- the fire may recur, but not necessarily the ground-level air quality impact
- Continued care needed in smoke management to avoid endangering the “unlikely to recur” assumption

Summary

- Wildfire and other uncontrollable events can have major impact on air quality
- In some cases events can be excluded from regulatory decision making if they meet EPA criteria
- Policy still requires action to protect public health and allows for public scrutiny of decisions
- Flexibility, but no easy exit on prescribed fire
- For more info see 72 FR 15360