

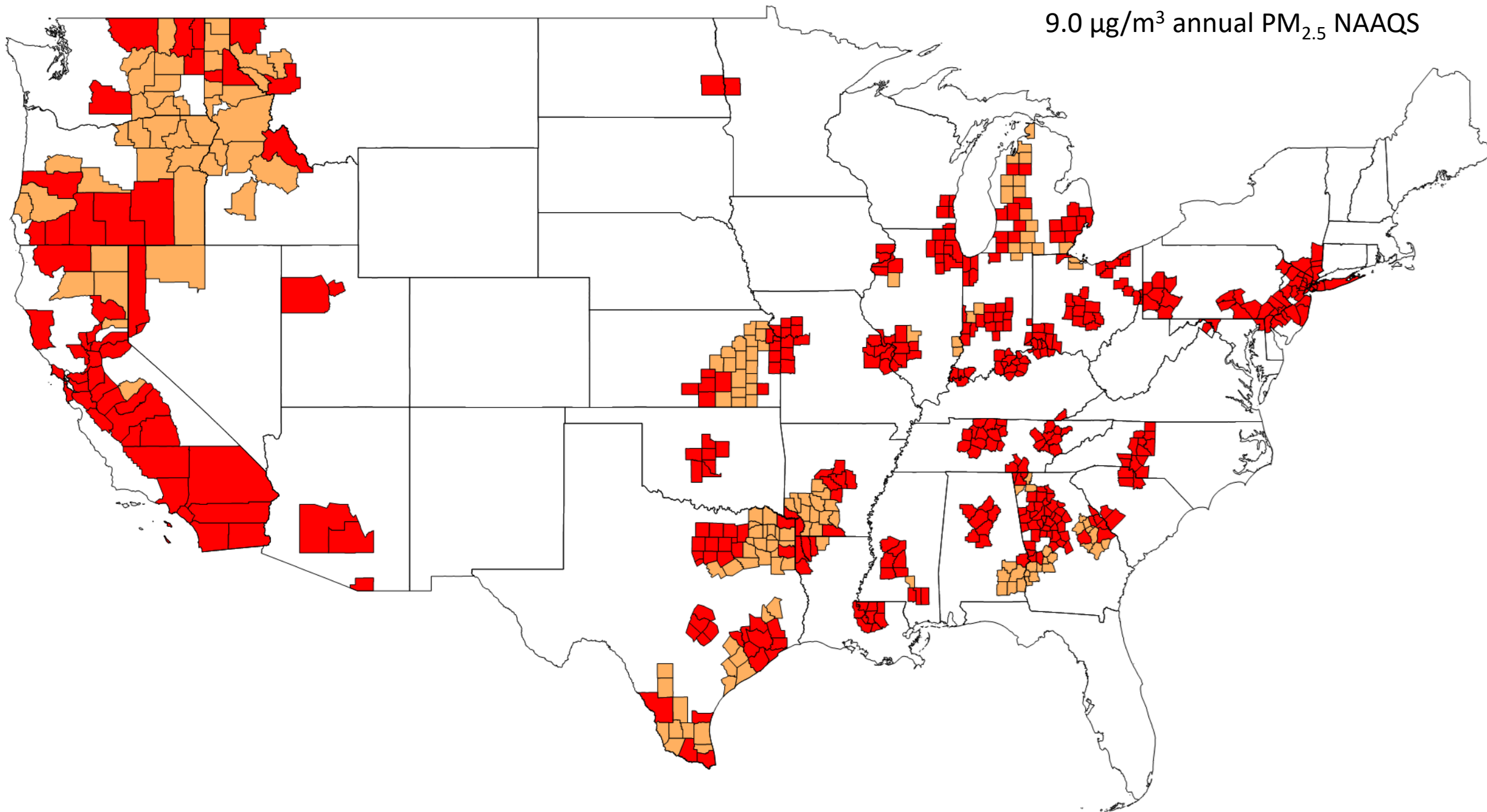
2021-2023 Annual PM_{2.5}
Design Value Maps -
Monitored / CBSA + Kriged Counties +
Headroom Maps

14 April 2025

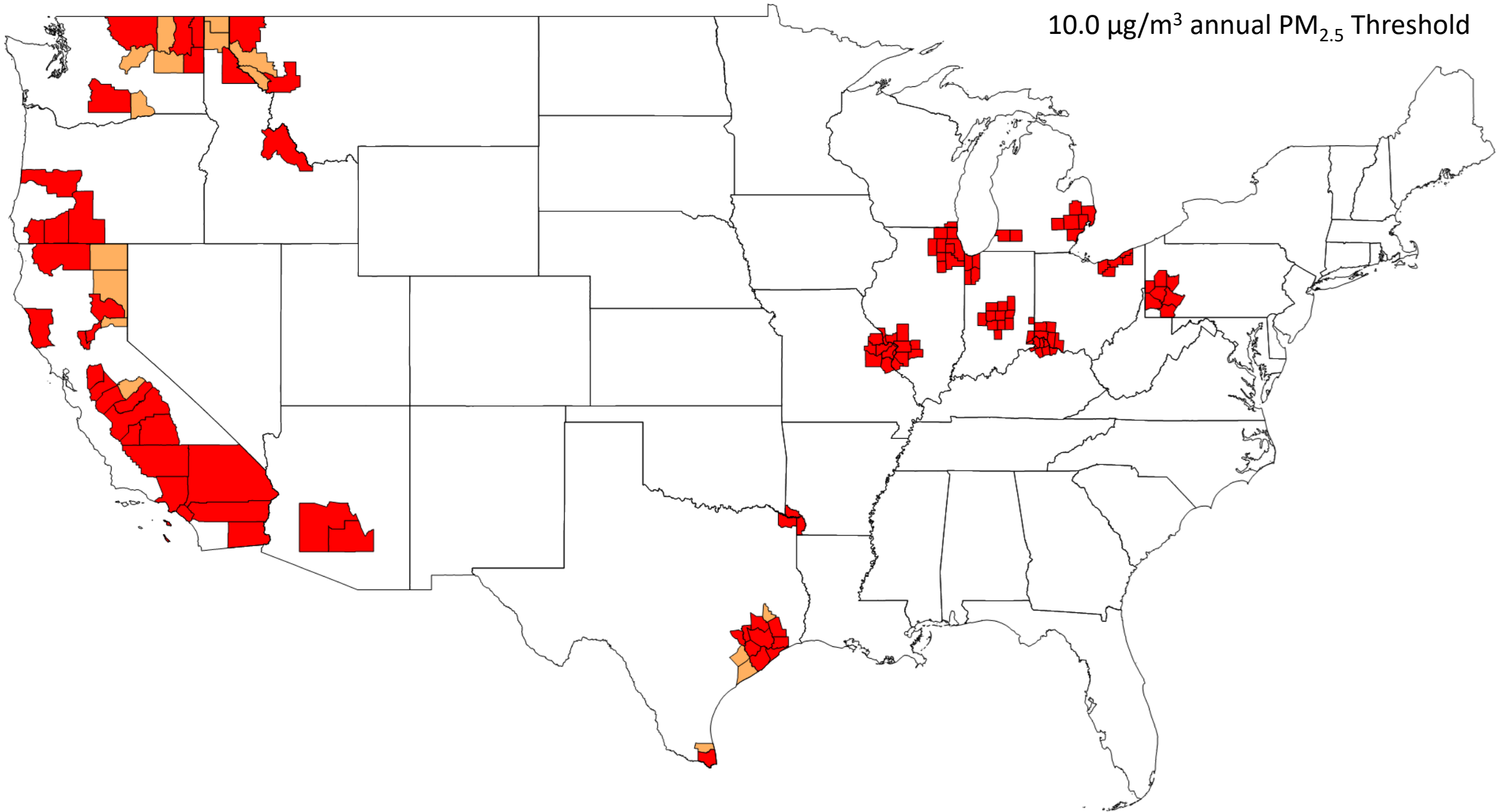
Design Value Data and Map Key

- All DVs obtained from EPA's site
 - <https://www.epa.gov/air-trends/air-quality-design-values>
- Map colors
 - "white" indicates attainment with the noted PM_{2.5} NAAQS (or threshold)
 - "red" indicates nonattainment with noted PM_{2.5} NAAQS at county/CBSA level
 - "orange" indicates nonattainment with noted PM_{2.5} NAAQS using kriging

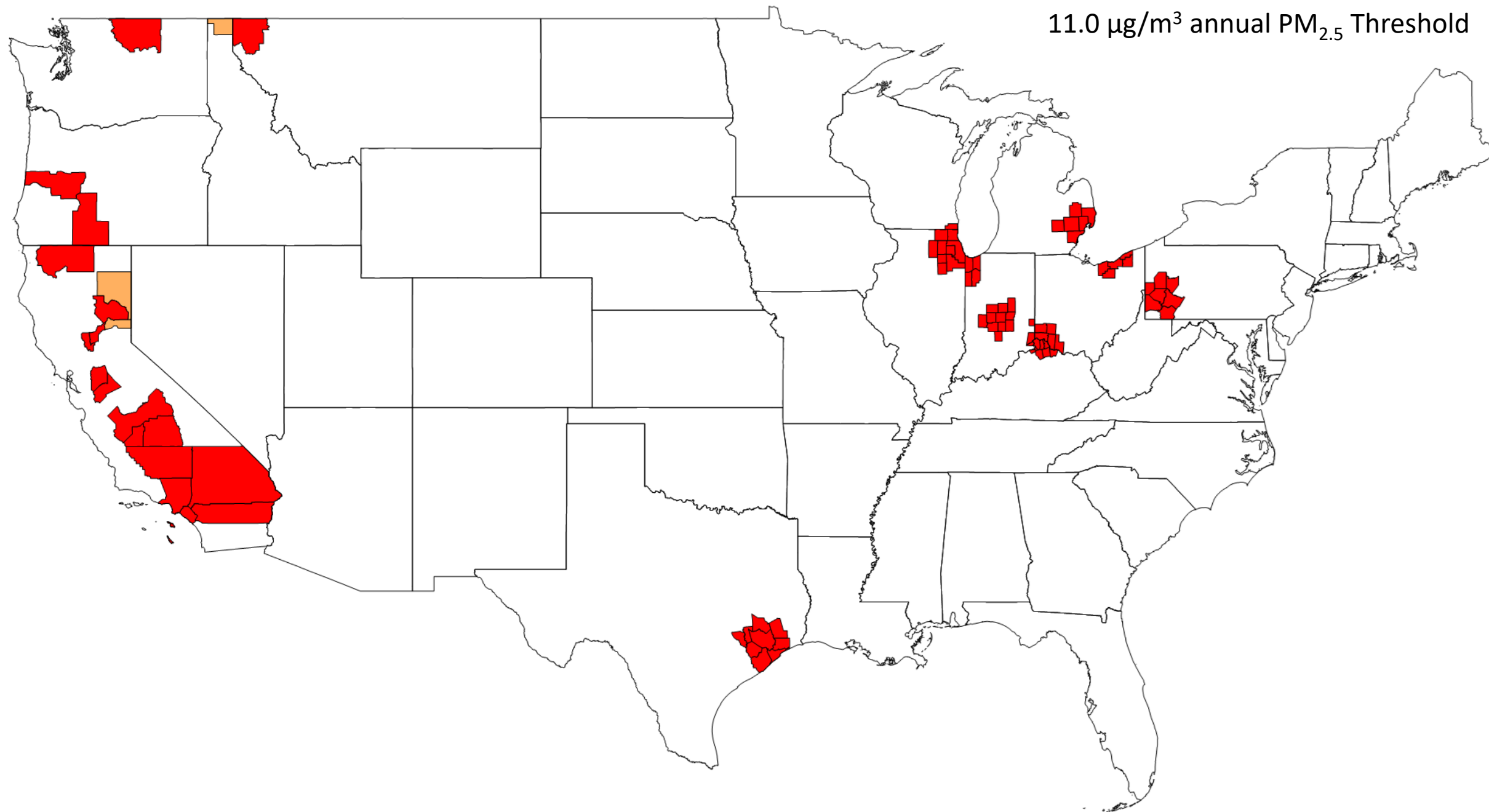
9.0 $\mu\text{g}/\text{m}^3$ annual $\text{PM}_{2.5}$ NAAQS



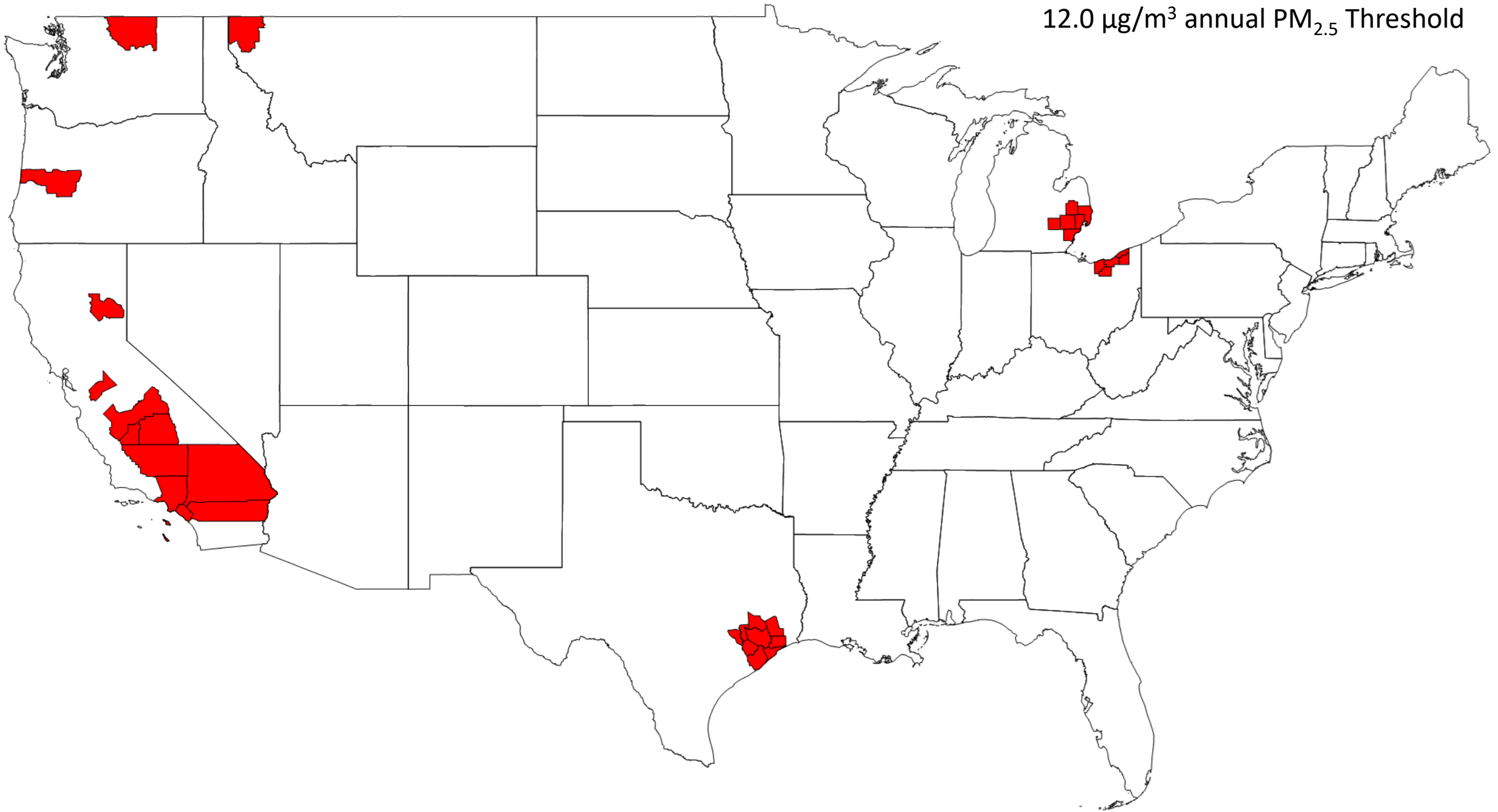
10.0 $\mu\text{g}/\text{m}^3$ annual $\text{PM}_{2.5}$ Threshold



11.0 $\mu\text{g}/\text{m}^3$ annual $\text{PM}_{2.5}$ Threshold

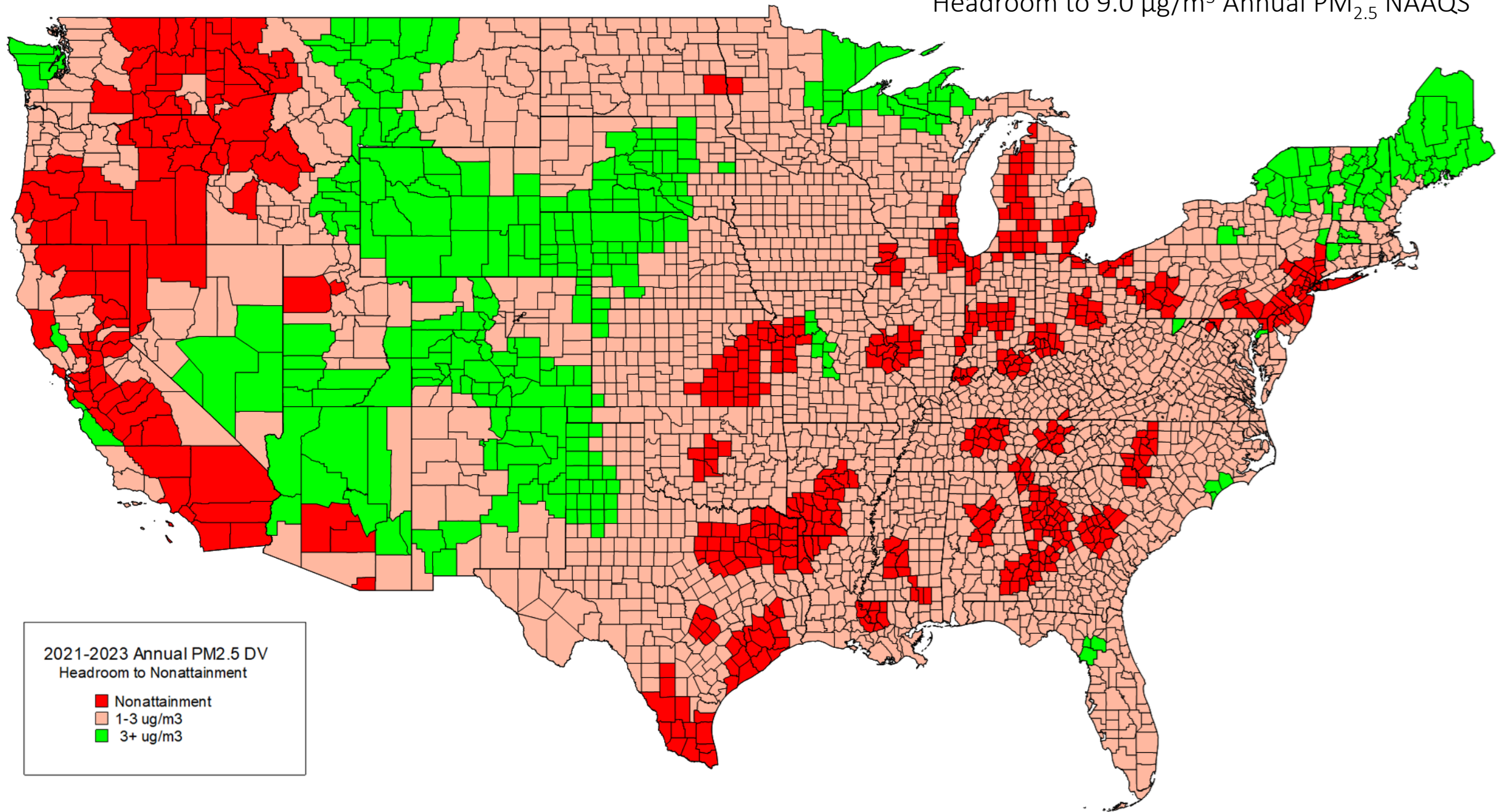


12.0 $\mu\text{g}/\text{m}^3$ annual $\text{PM}_{2.5}$ Threshold



PM_{2.5} DV Headroom Mapping

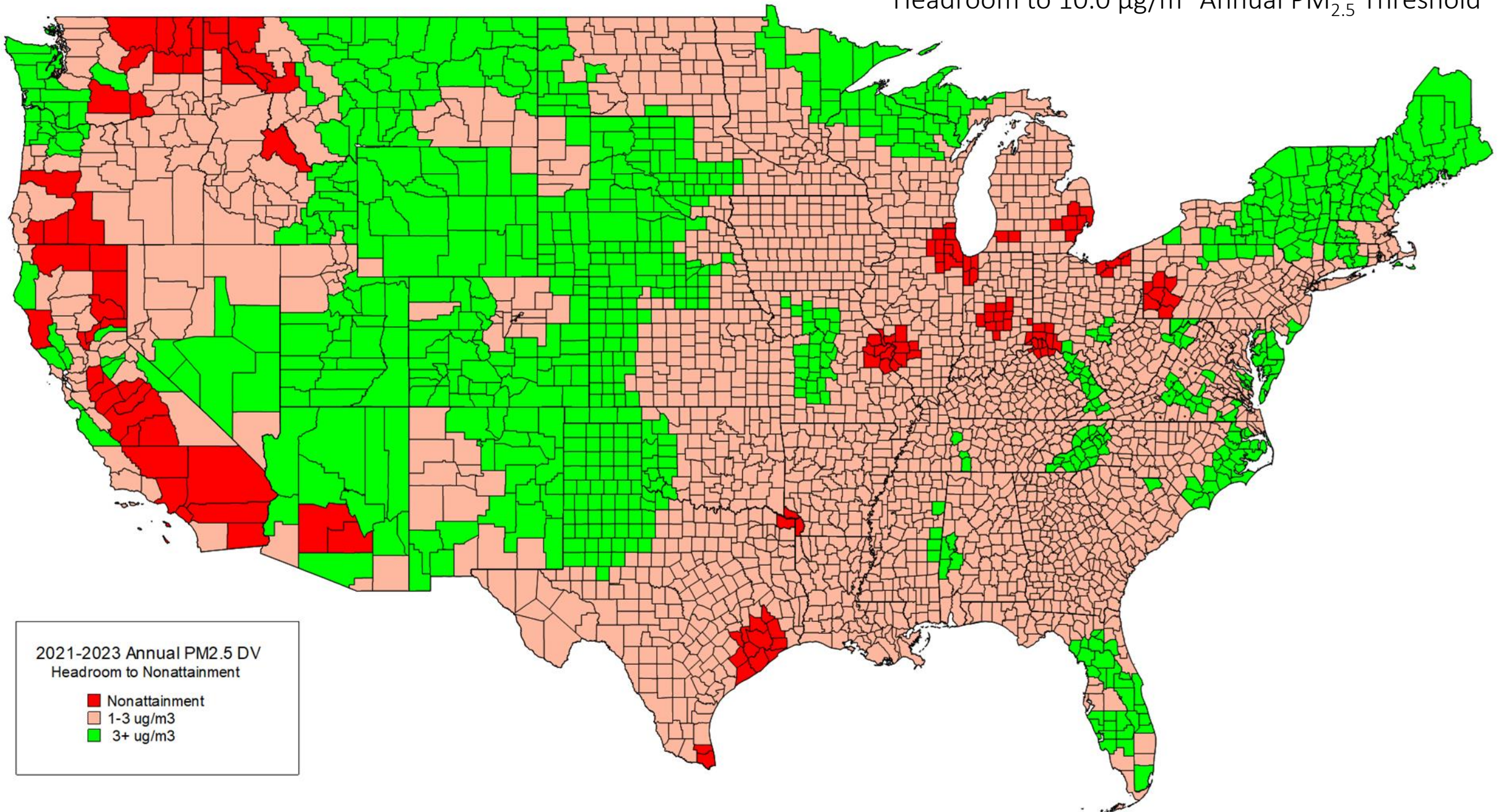
- Used maximum annual 2021-2023 PM_{2.5} DVs to represent each monitored county and expanded to CBSA boundaries using maximum value within the CBSA
- Calculated non-monitored counties using a standard method of geospatial statistical interpolation (“kriging”) that is used where spatially-related data has been collected and estimates of "fill-in" data are desired in the locations (spatial gaps) between the actual measurements
- Five (5) closest monitored values used to estimate non-monitored county values using this inverse-distance weighted averaging method
- “Headroom” is remaining $\mu\text{g}/\text{m}^3$ to reach annual PM_{2.5} NAAQS or threshold



2021-2023 Annual $\text{PM}_{2.5}$ DV
Headroom to Nonattainment

- Nonattainment
- 1-3 $\mu\text{g}/\text{m}^3$
- 3+ $\mu\text{g}/\text{m}^3$

Headroom to 10.0 $\mu\text{g}/\text{m}^3$ Annual $\text{PM}_{2.5}$ Threshold

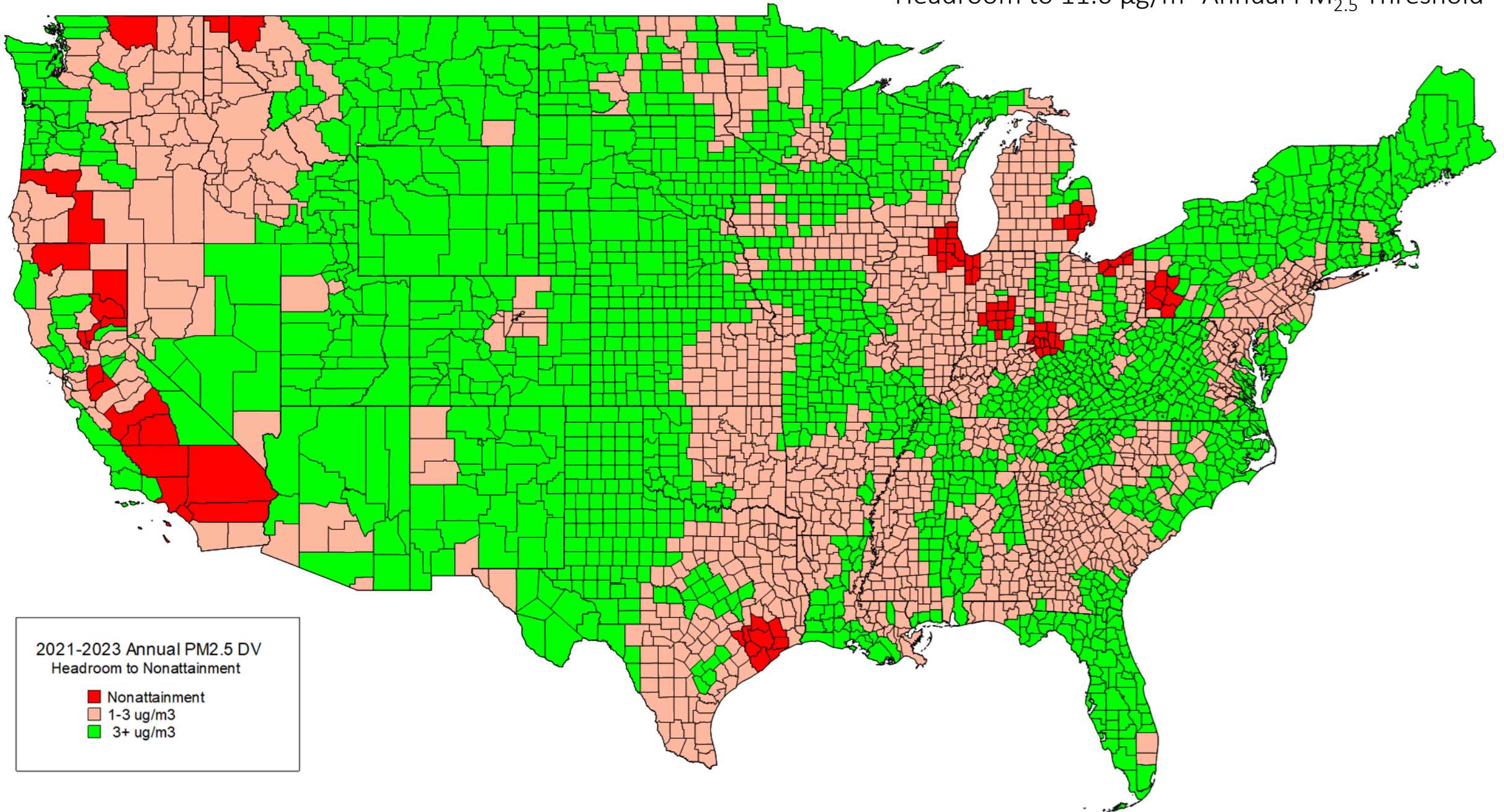


2021-2023 Annual $\text{PM}_{2.5}$ DV
Headroom to Nonattainment

- Nonattainment
- 1-3 $\mu\text{g}/\text{m}^3$
- 3+ $\mu\text{g}/\text{m}^3$

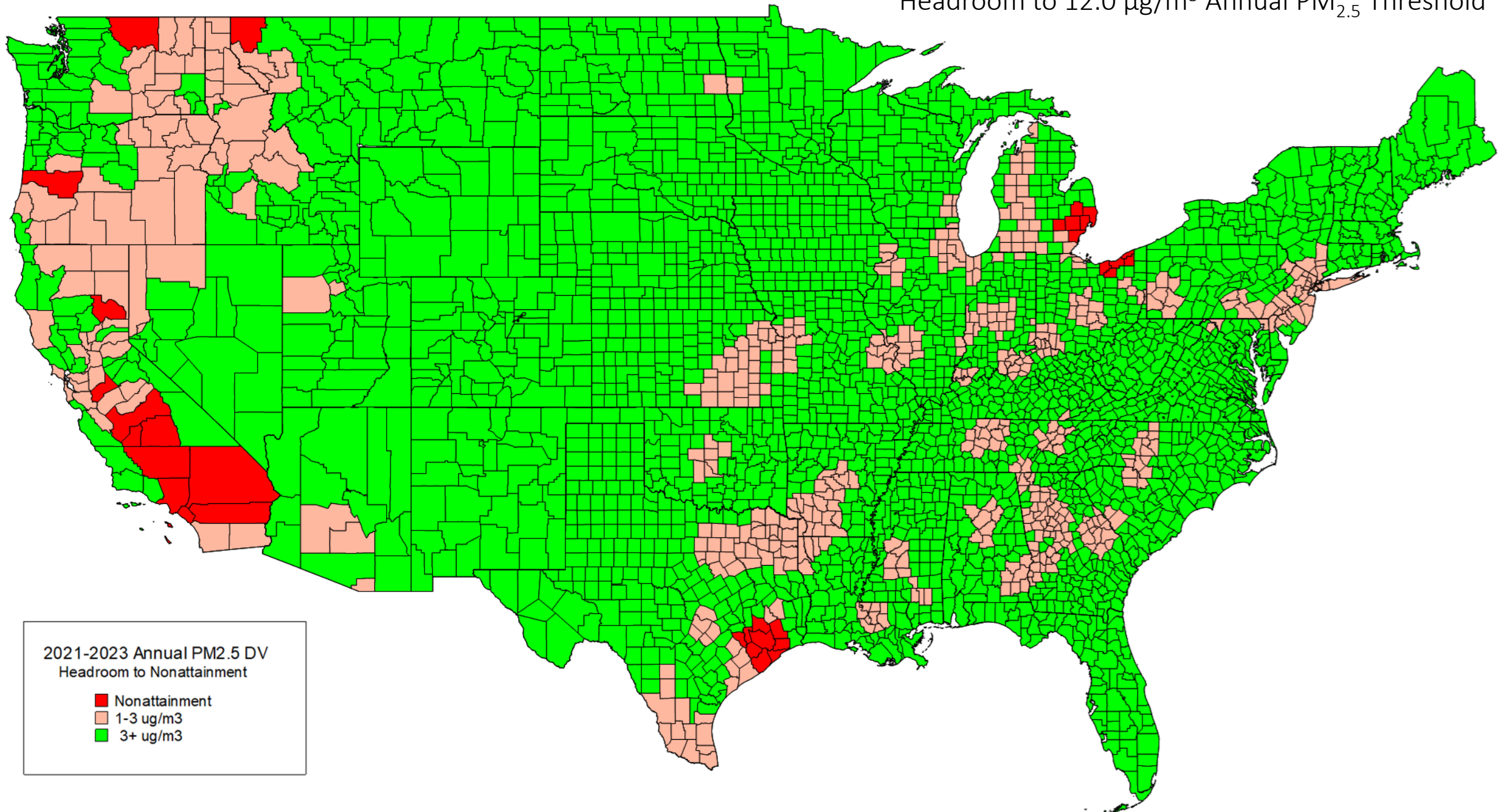
Non-monitored county values are calculated using inverse distance weighting average of five closest monitored values

Headroom to 11.0 $\mu\text{g}/\text{m}^3$ Annual $\text{PM}_{2.5}$ Threshold



Non-monitored county values are calculated using inverse distance weighting average of five closest monitored values

Headroom to 12.0 $\mu\text{g}/\text{m}^3$ Annual $\text{PM}_{2.5}$ Threshold



Non-monitored county values are calculated using inverse distance weighting average of five closest monitored values