

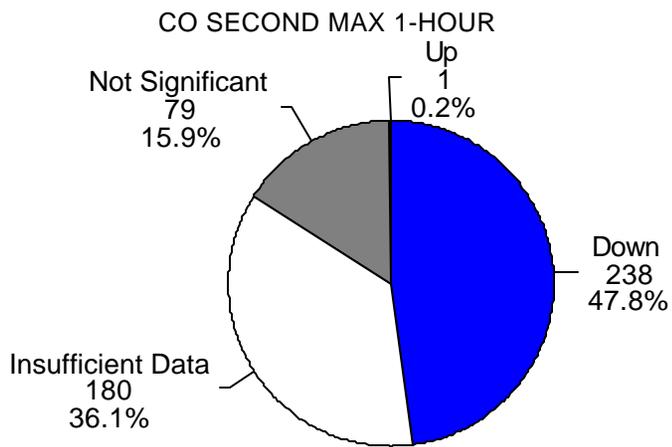
# National Assessment of the Existing Criteria Pollutant Monitoring Networks

O<sub>3</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub>, Pb, PM<sub>10</sub>, PM<sub>2.5</sub>

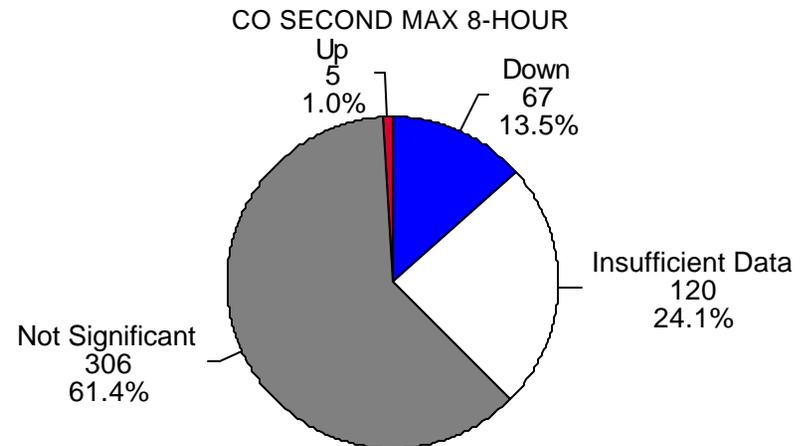
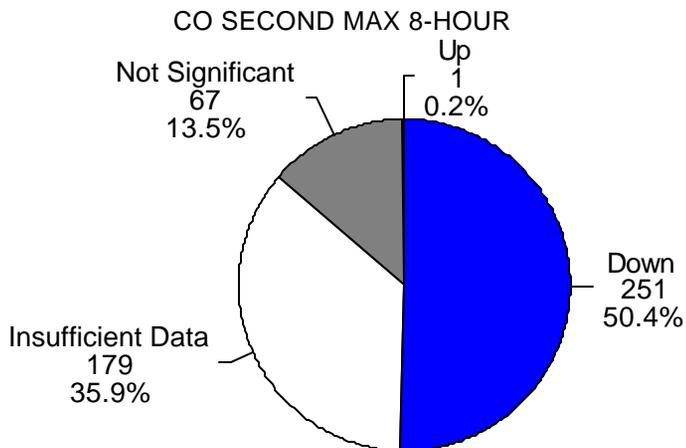
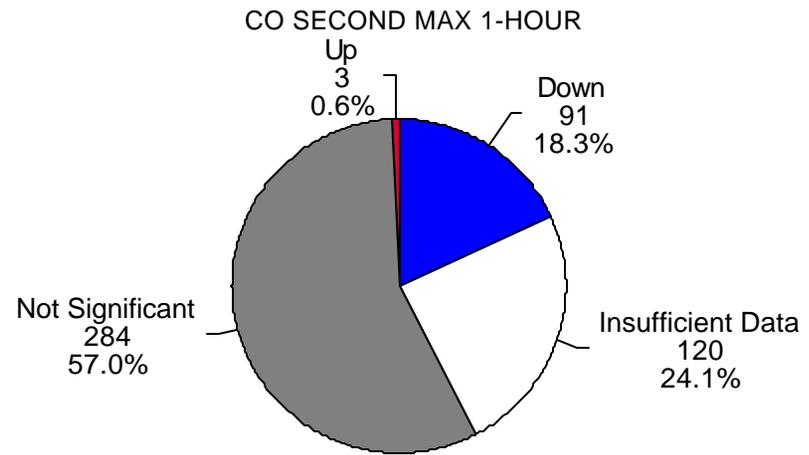
Part 3 - July 25, 2001

# Carbon Monoxide Trends

## 10-Year Trend

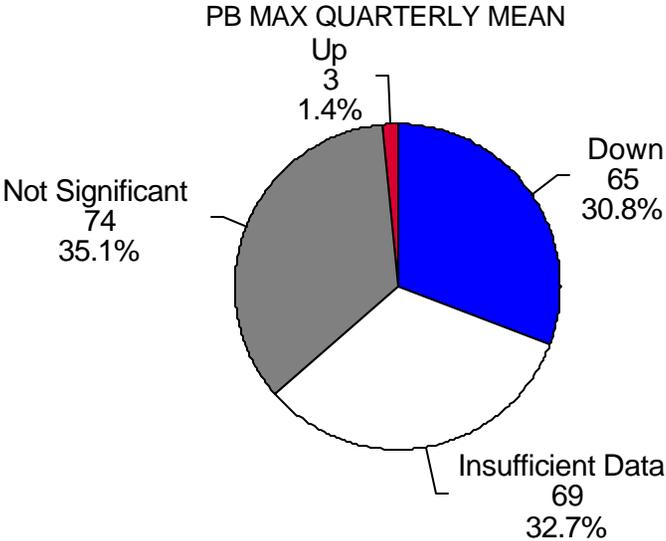


## 5-Year Trend

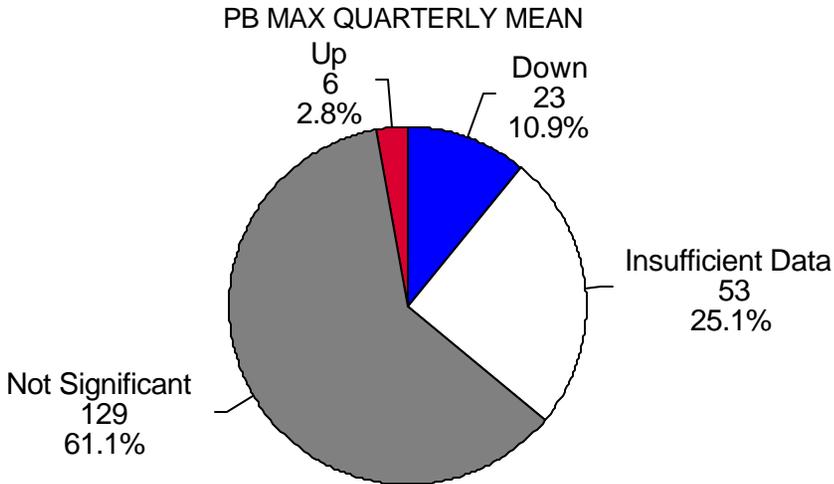


# Lead Trends

## 10-Year Trend

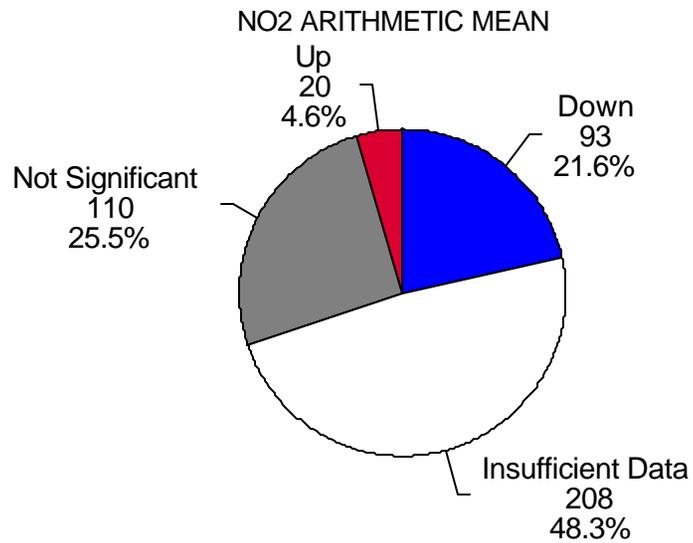


## 5-Year Trend

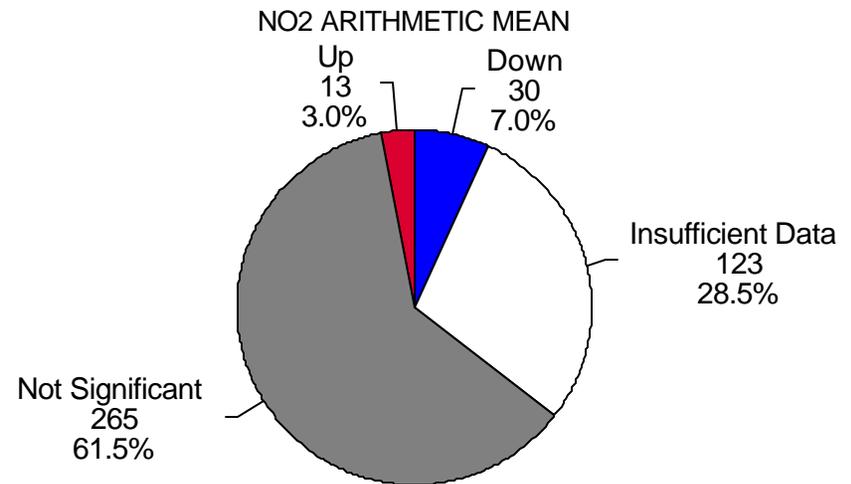


# Nitrogen Dioxide Trends

## 10-Year Trend

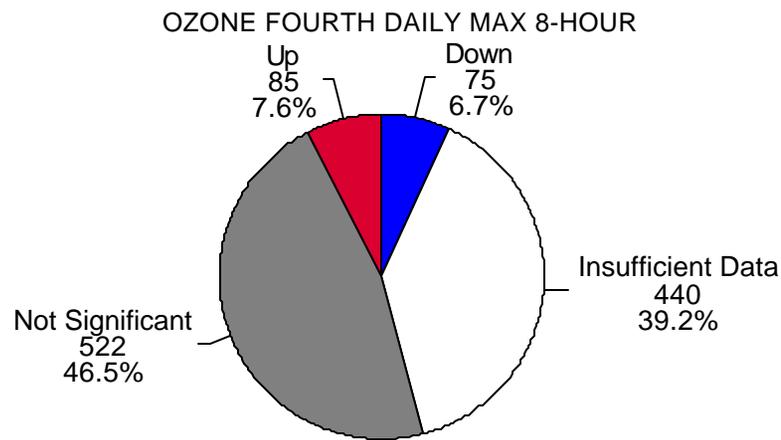


## 5-Year Trend

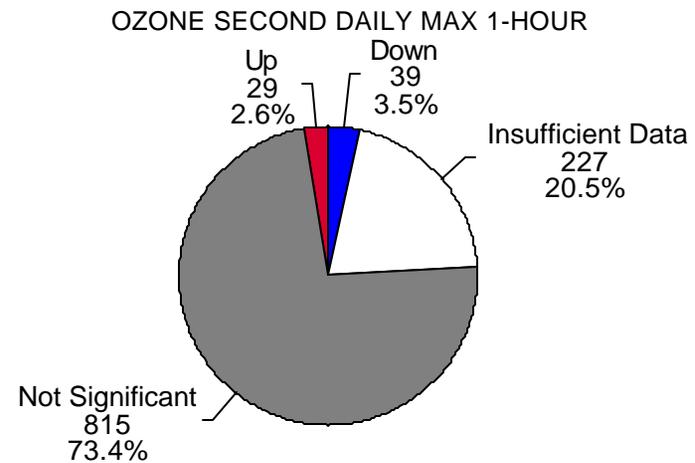
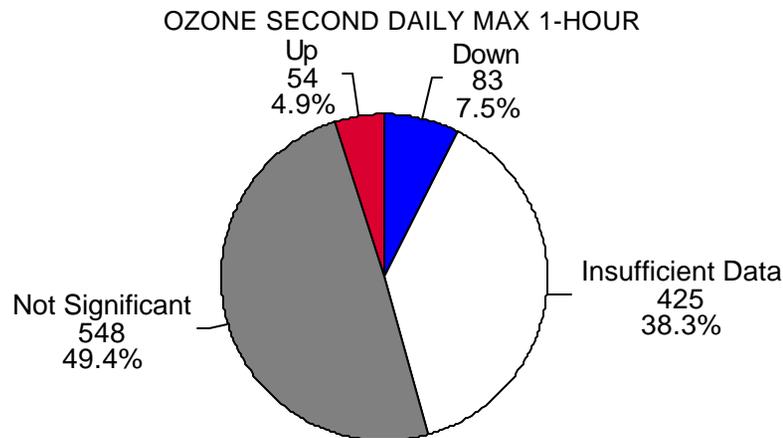
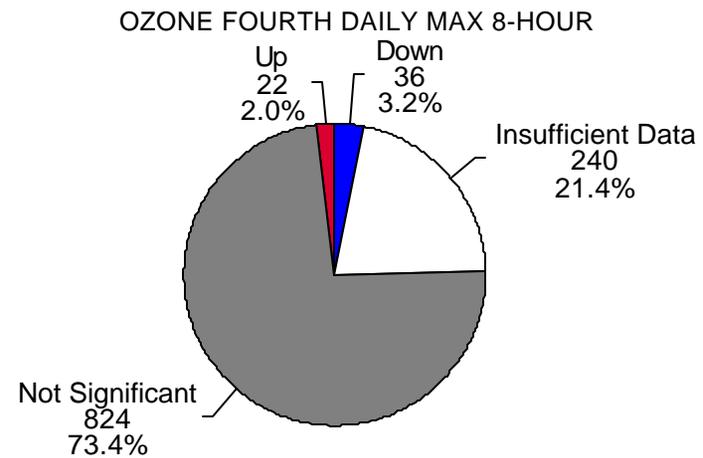


# Ozone Trends

## 10-Year Trend

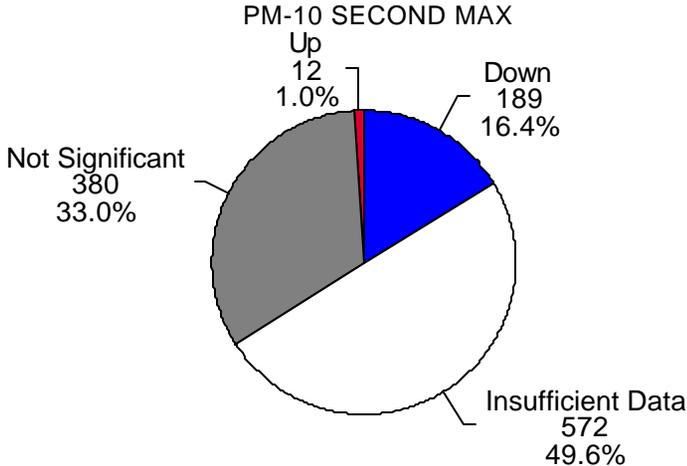


## 5-Year Trend

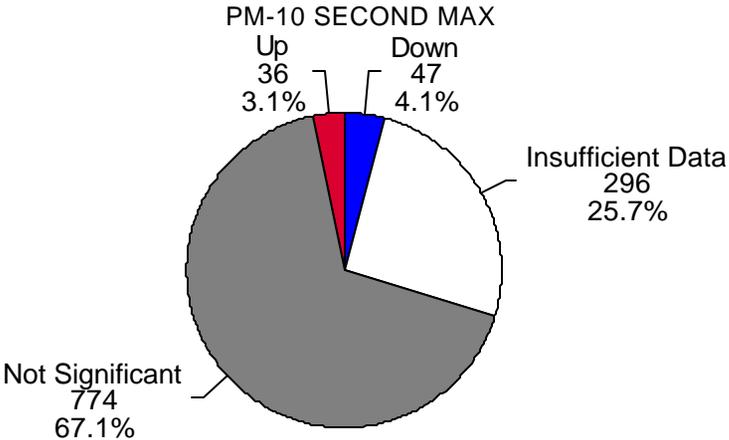


# PM10 Trends

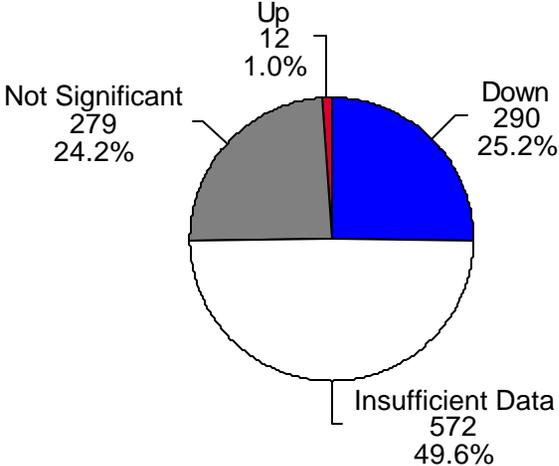
## 10-Year Trend



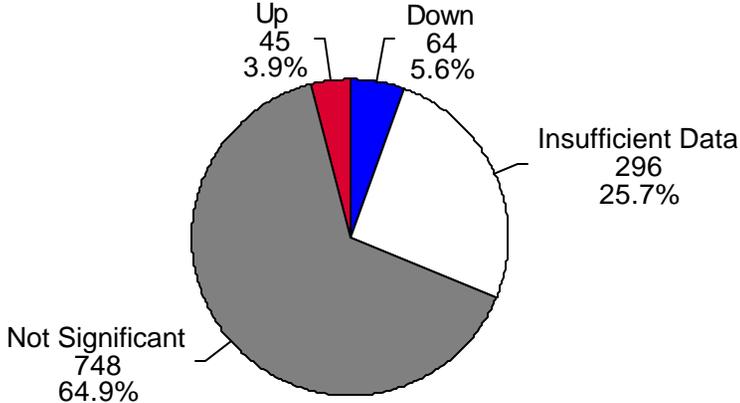
## 5-Year Trend



## PM-10 WEIGHTED ANNUAL MEAN

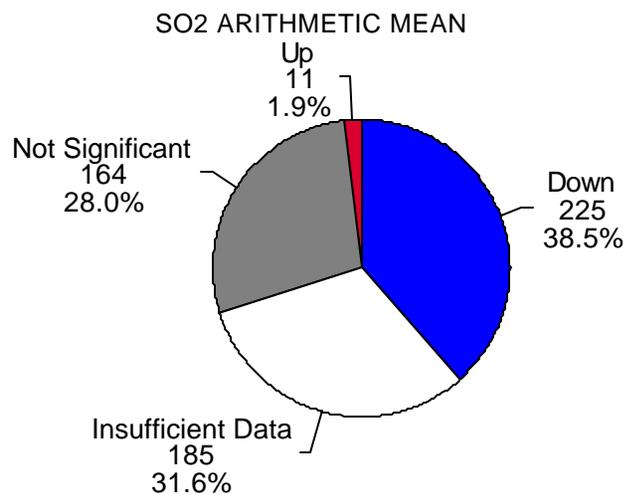


## PM-10 WEIGHTED ANNUAL MEAN

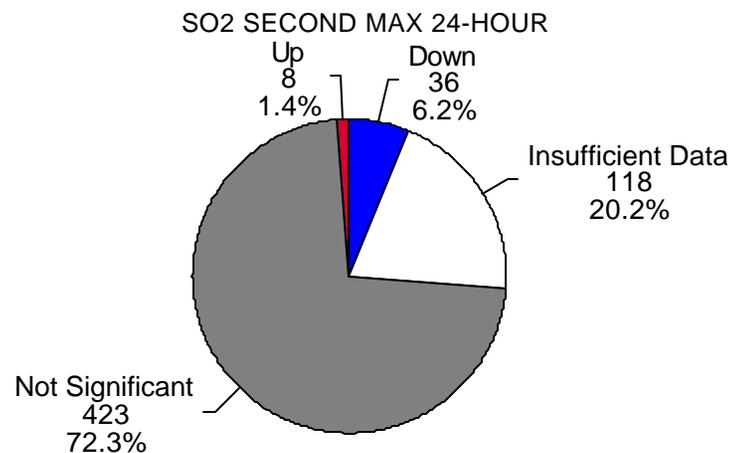
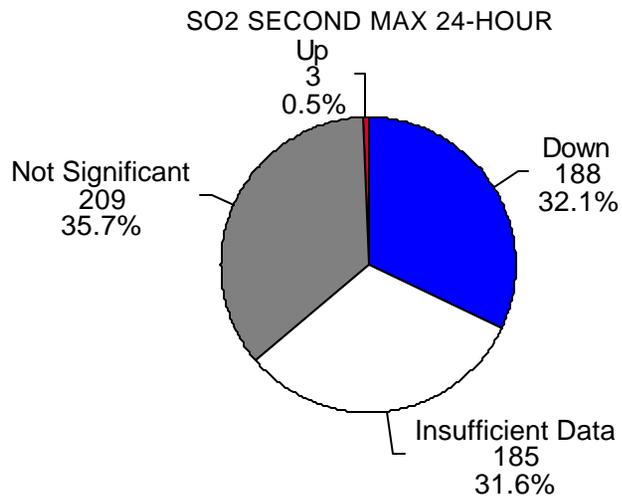
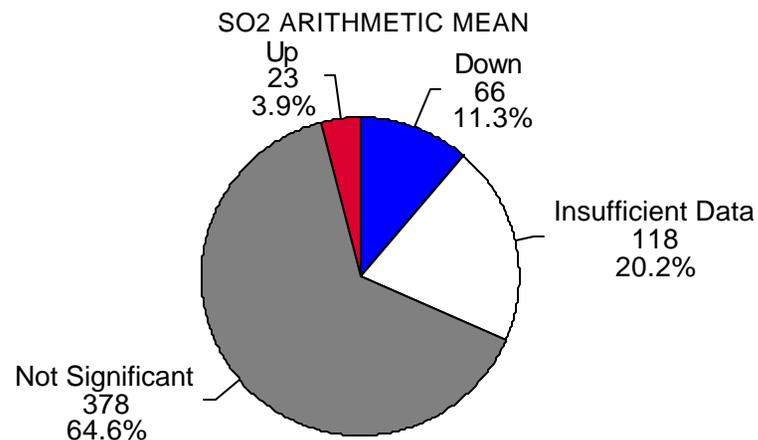


# Sulfur Dioxide Trends

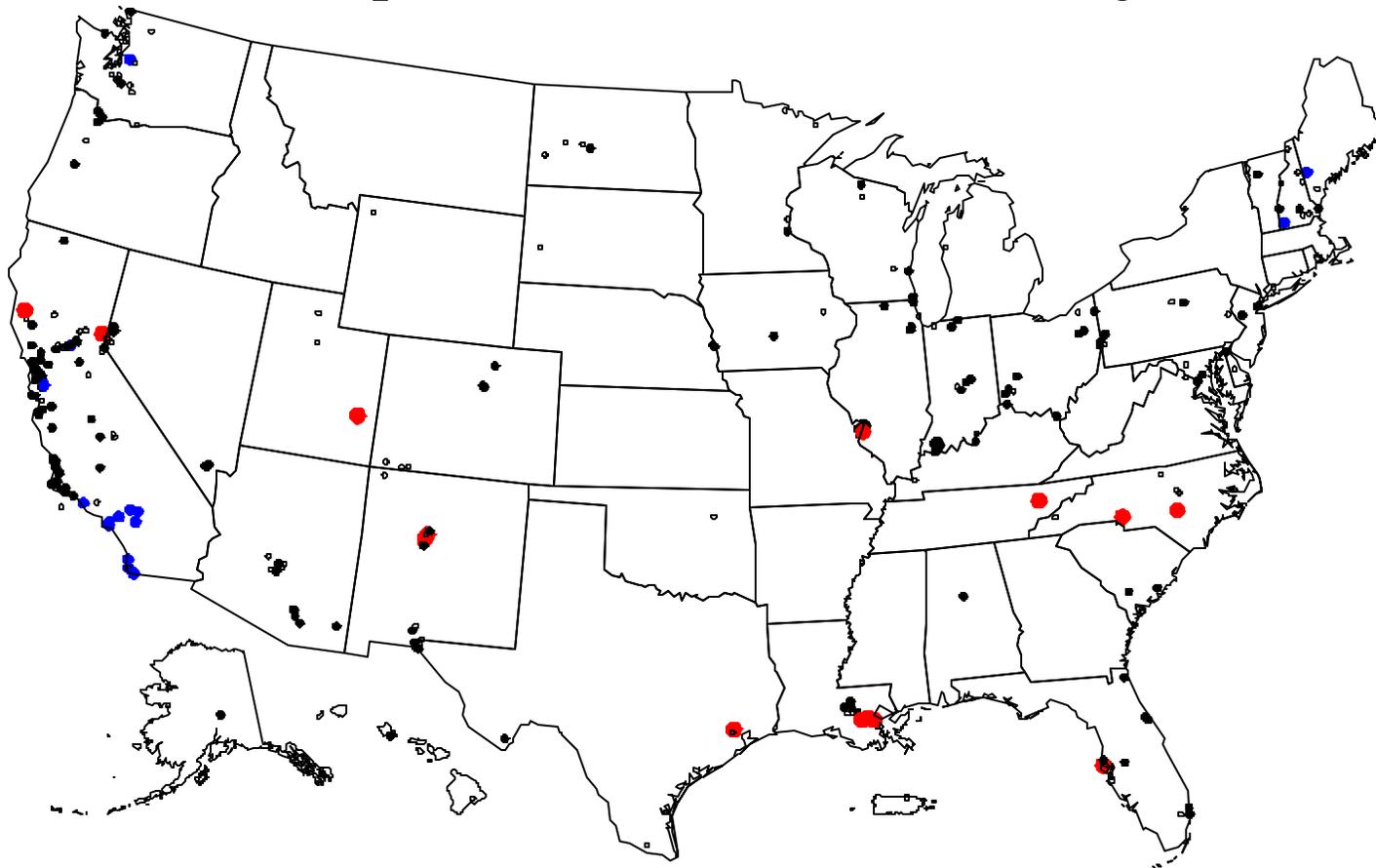
## 10-Year Trend



## 5-Year Trend

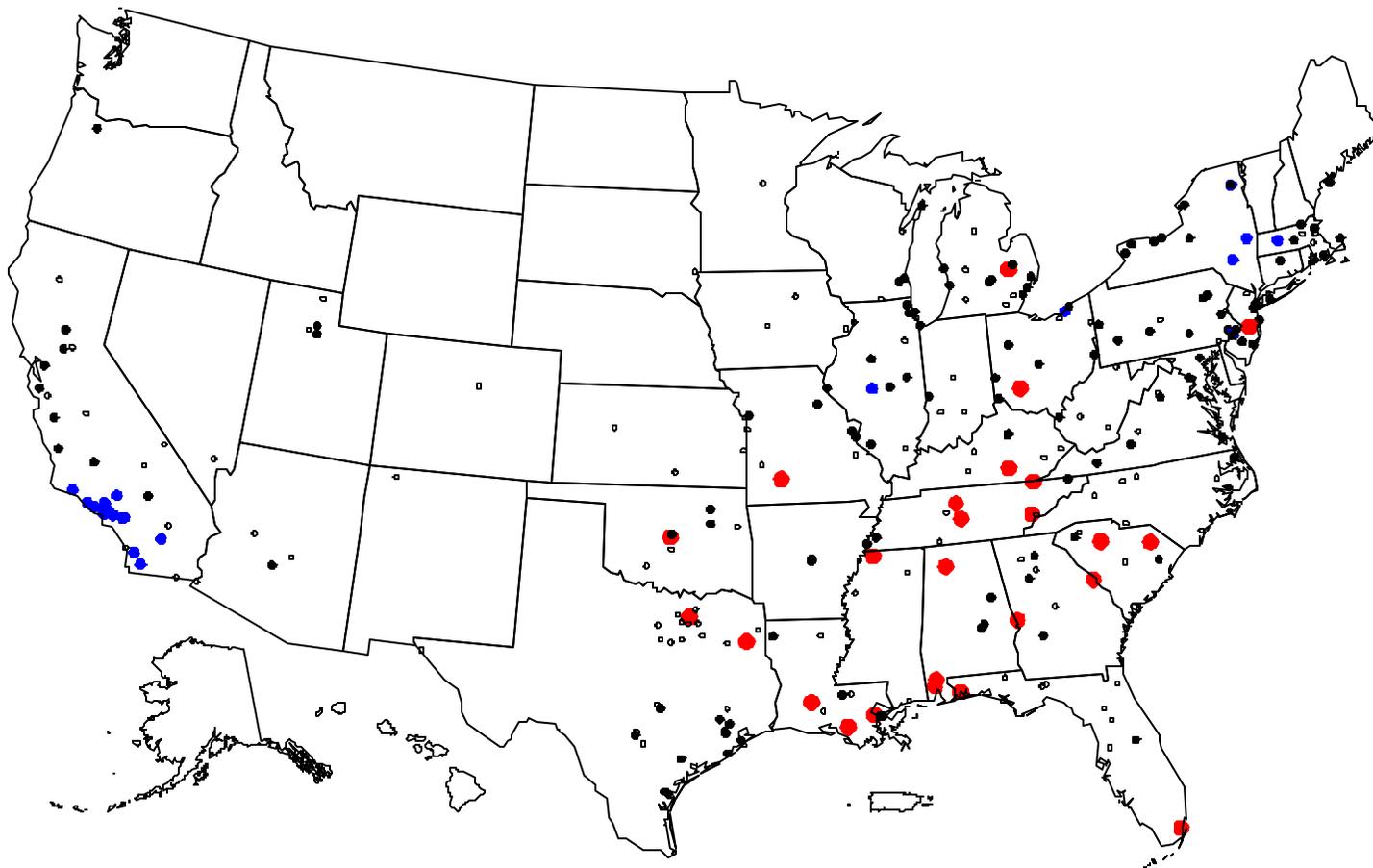


# 8-hr O<sub>3</sub> 10-yr Trends - Aggregate Ranked (Equal Weighting) Sites in 4<sup>th</sup> Quartile (Least Important): Red=Up, Blue=Down, Black=Not Significant



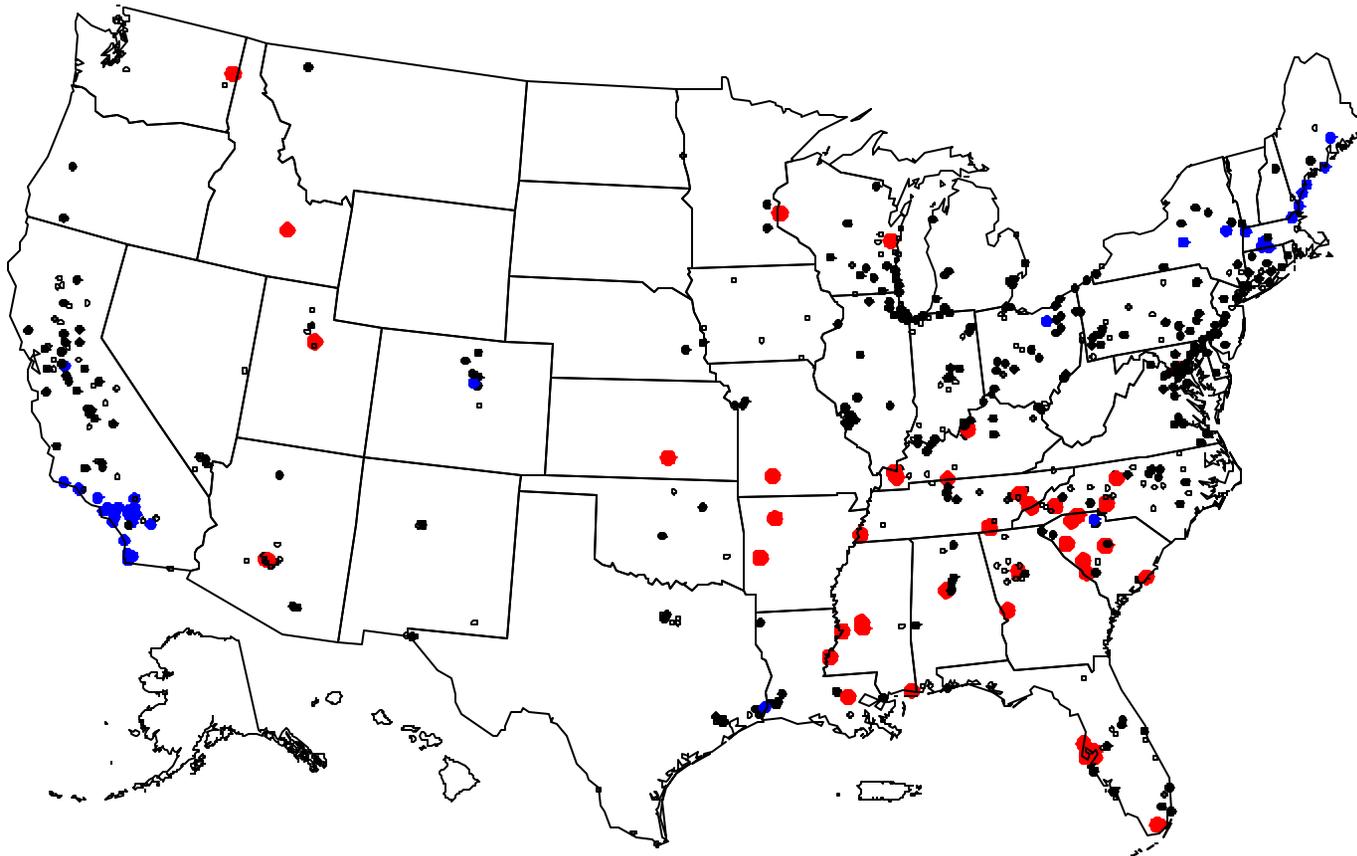
O<sub>3</sub> 8hr Trends-Aggregate Ranked Sites Below 25th Percentile:Red=Upward, Blue=Downward, Black=Not Significant, Emotv=Insufficient Data

# 8-hr O<sub>3</sub> 10-yr Trends-Aggregate Ranked (Equal Weighting) Sites in 1<sup>st</sup> Quartile (Most Important): Red=Up, Blue=Down, Black=Not Significant



O<sub>3</sub> 8hr Trends-Aggregate Ranked Sites Above 75th Percentile: Red=Upward, Blue=Downward, Black=Not Significant, Emotv=Insufficient Data

# 8-hr O<sub>3</sub> 10-yr Trends-Aggregate Ranked (Equal Weighting) Sites in 2<sup>nd</sup> and 3<sup>rd</sup> Quartiles: Red=Up, Blue=Down, Black=Not Significant

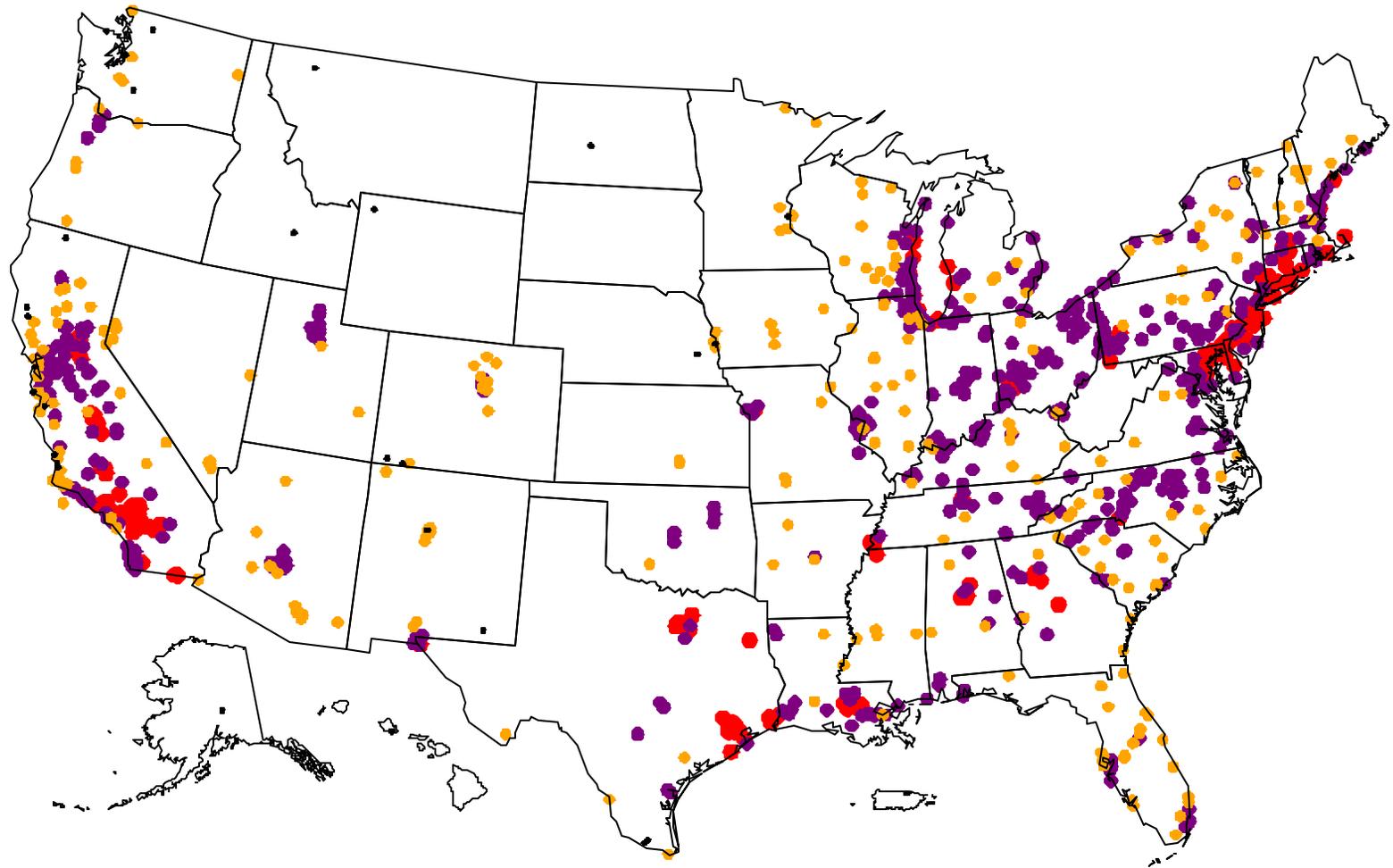


O<sub>3</sub> 8hr Trends-Aggregate Ranked Sites in 2nd and 3rd Quartile: Red=Upward, Blue=Downward, Black=Not Significant, Emotv=Insufficient Data

# 95-97 1-Hour O<sub>3</sub> 2nd Max - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

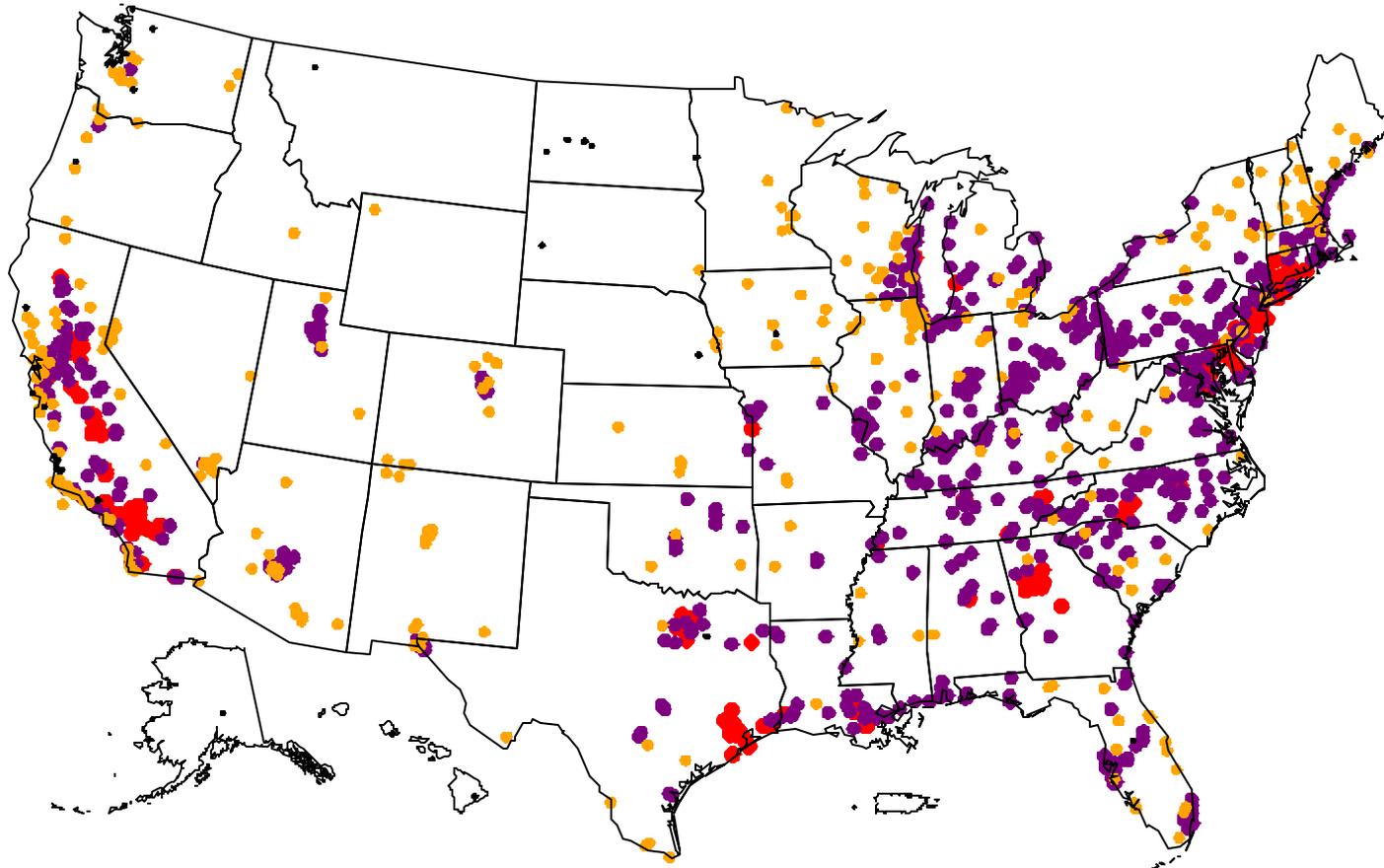
Orange= 60-80%, Black= <60%



# 98-00 1-Hour O<sub>3</sub> 2nd Max - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

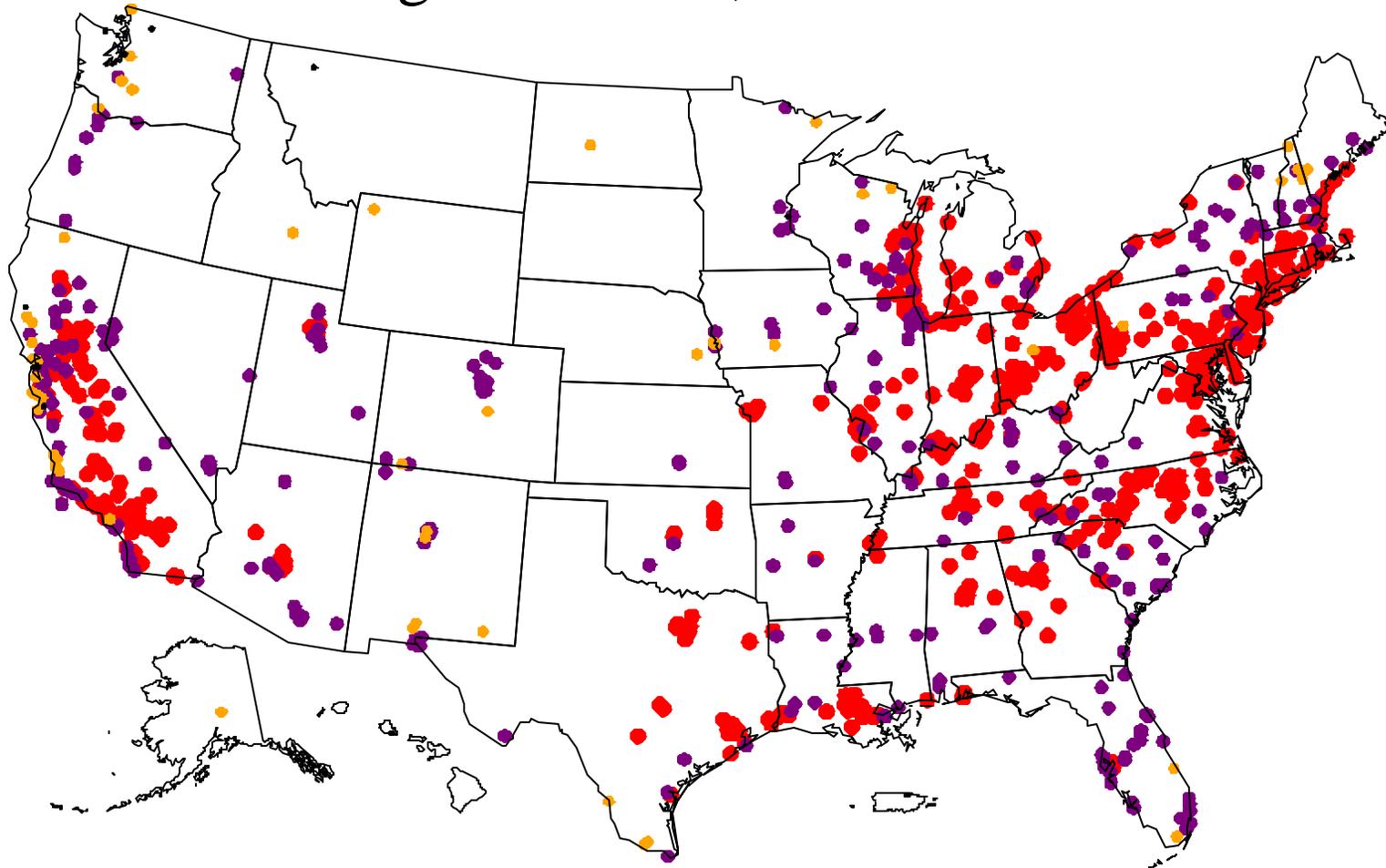
Orange= 60-80%, Black= <60%



98-00 1-Hour O<sub>3</sub> 2nd Max Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# 98-00 8-Hour O3 4th Max - Percent of NAAQS:

Red= >100%, Purple= 80-100%,  
Orange= 60-80%, Black= <60%

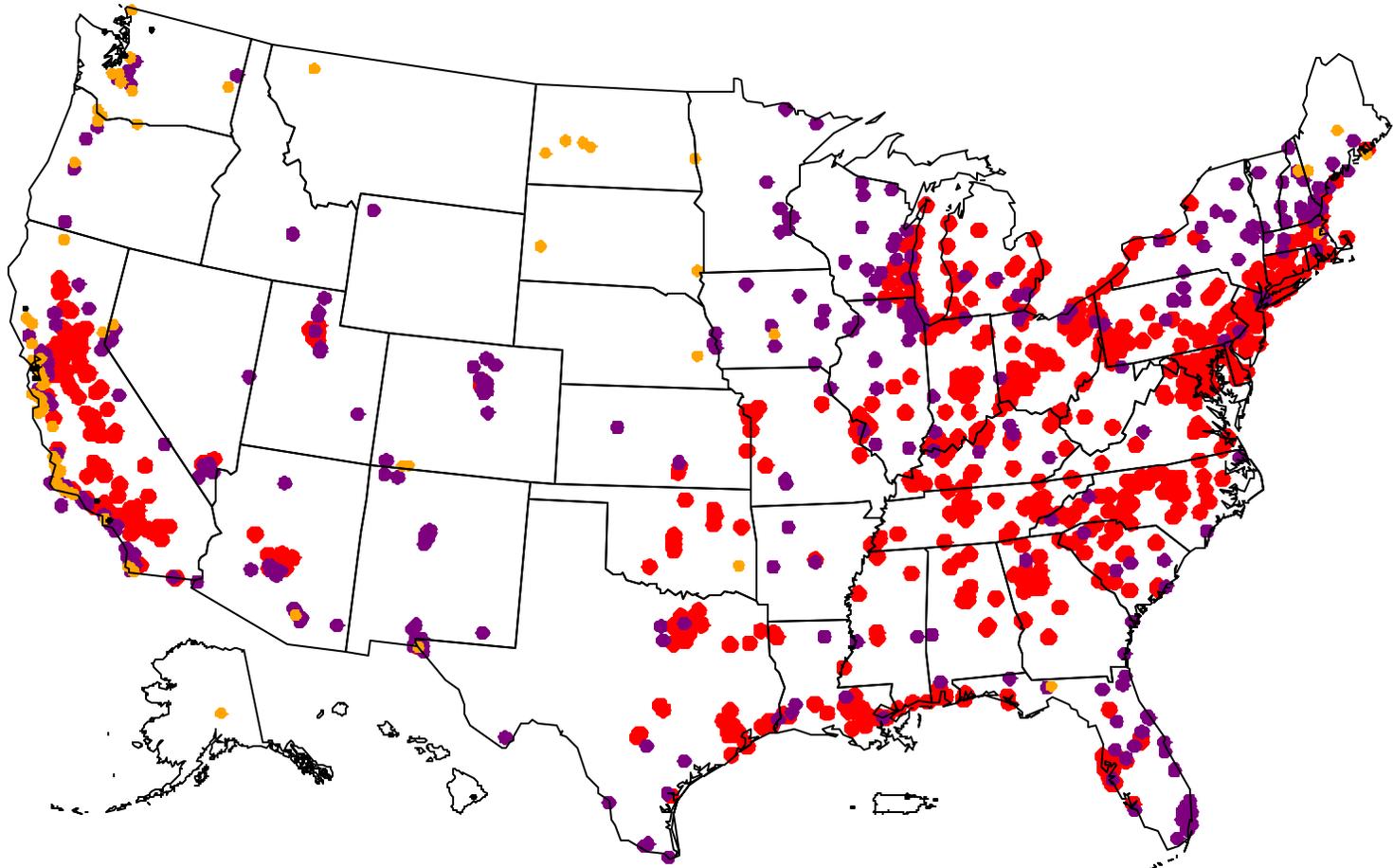


95-97 8-Hour O3 2nd Max Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# 98-00 8-Hour O<sub>3</sub> 4th Max - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

Orange= 60-80%, Black= <60%



# 1-Hour CO 2nd Max - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

Orange= 60-80%, Black= <60%

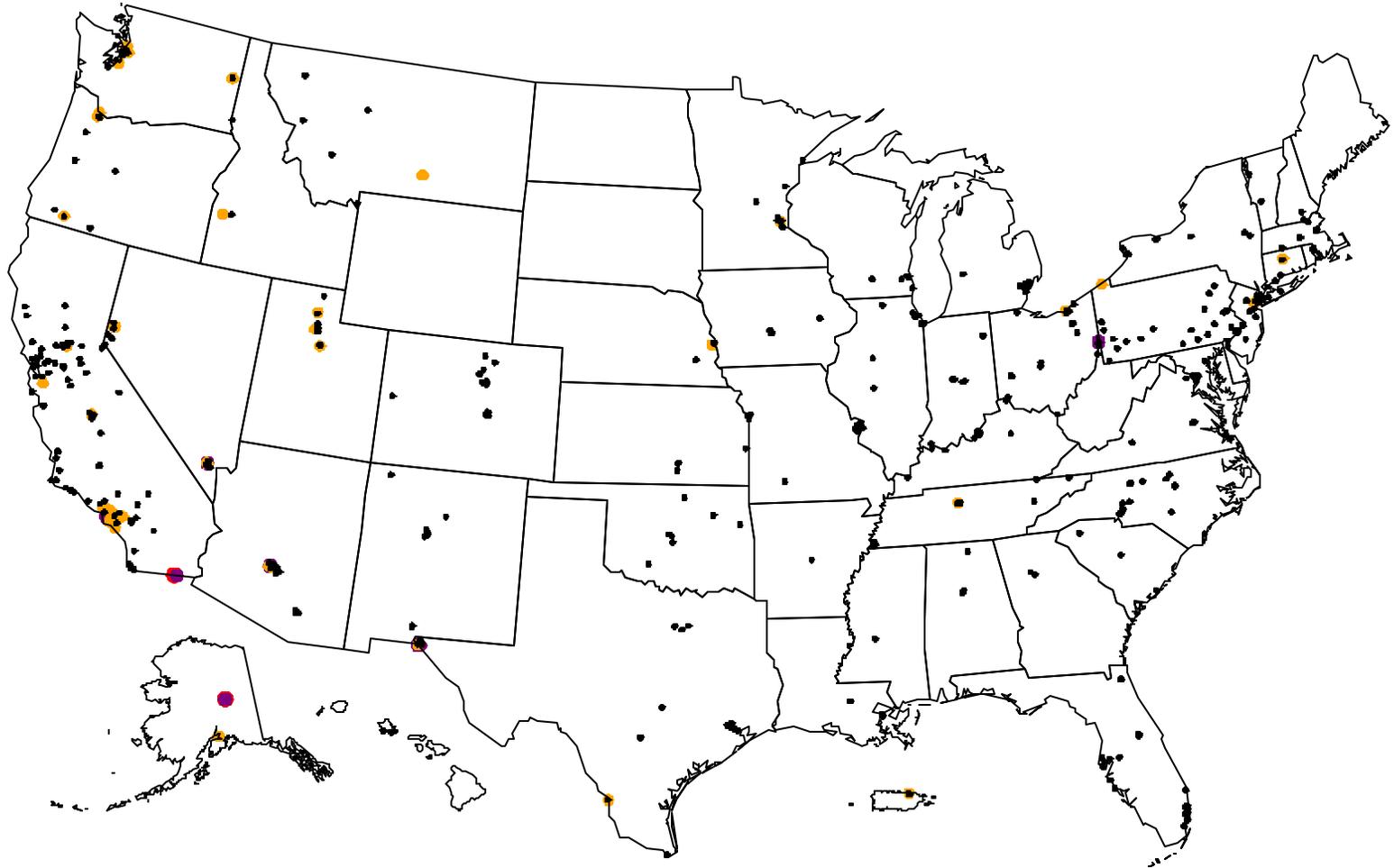


1-Hour CO 2nd Max Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# 8-Hour CO 2nd Max - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

Orange= 60-80%, Black= <60%



8-Hour CO 2nd Max Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# NO<sub>2</sub> Annual Mean - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

Orange= 60-80%, Black= <60%



NO<sub>2</sub> Annual Mean Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# SO<sub>2</sub> Annual Mean - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

Orange= 60-80%, Black= <60%

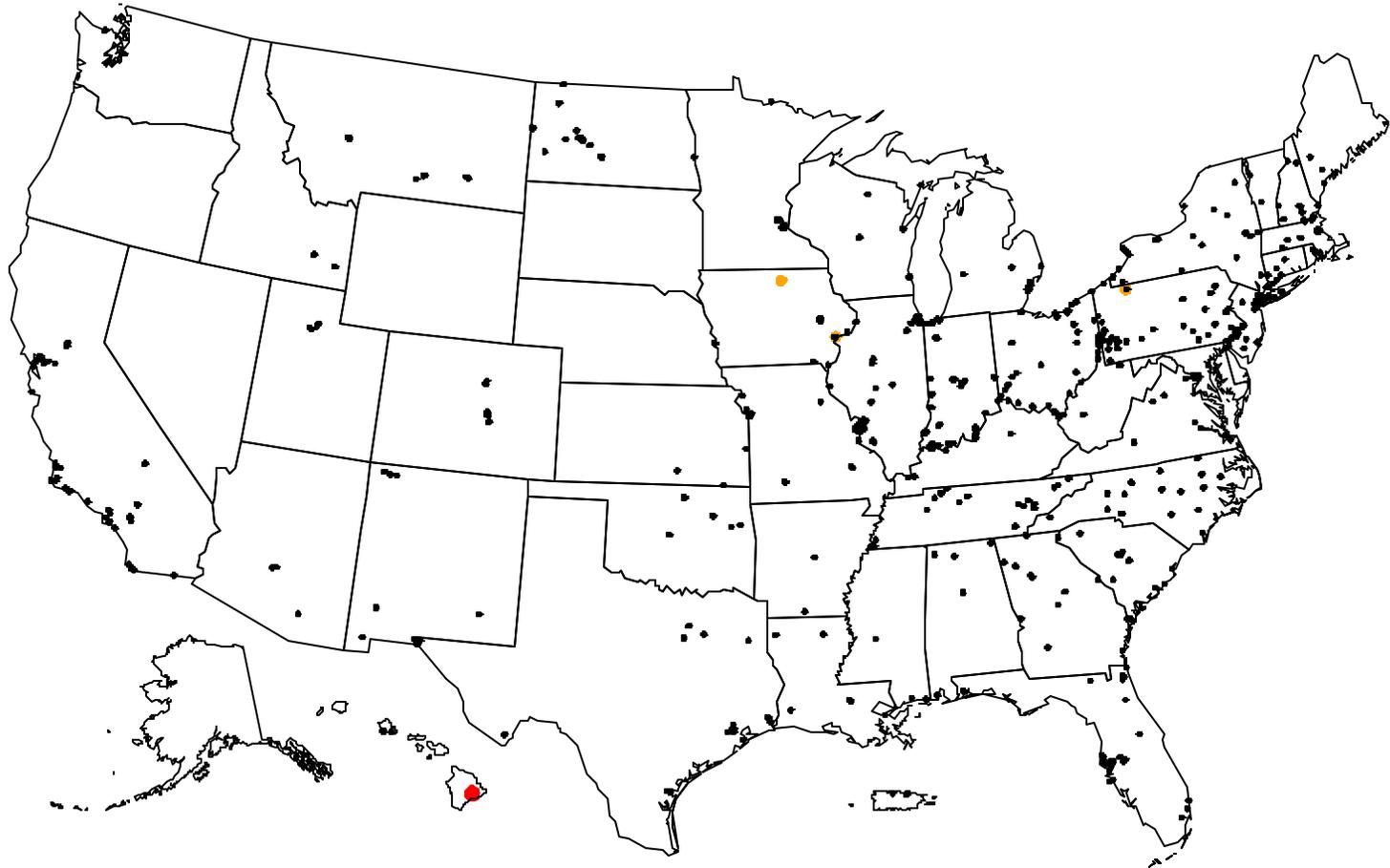


SO<sub>2</sub> Annual Mean Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# SO<sub>2</sub> 2<sup>nd</sup> Max - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

Orange= 60-80%, Black= <60%

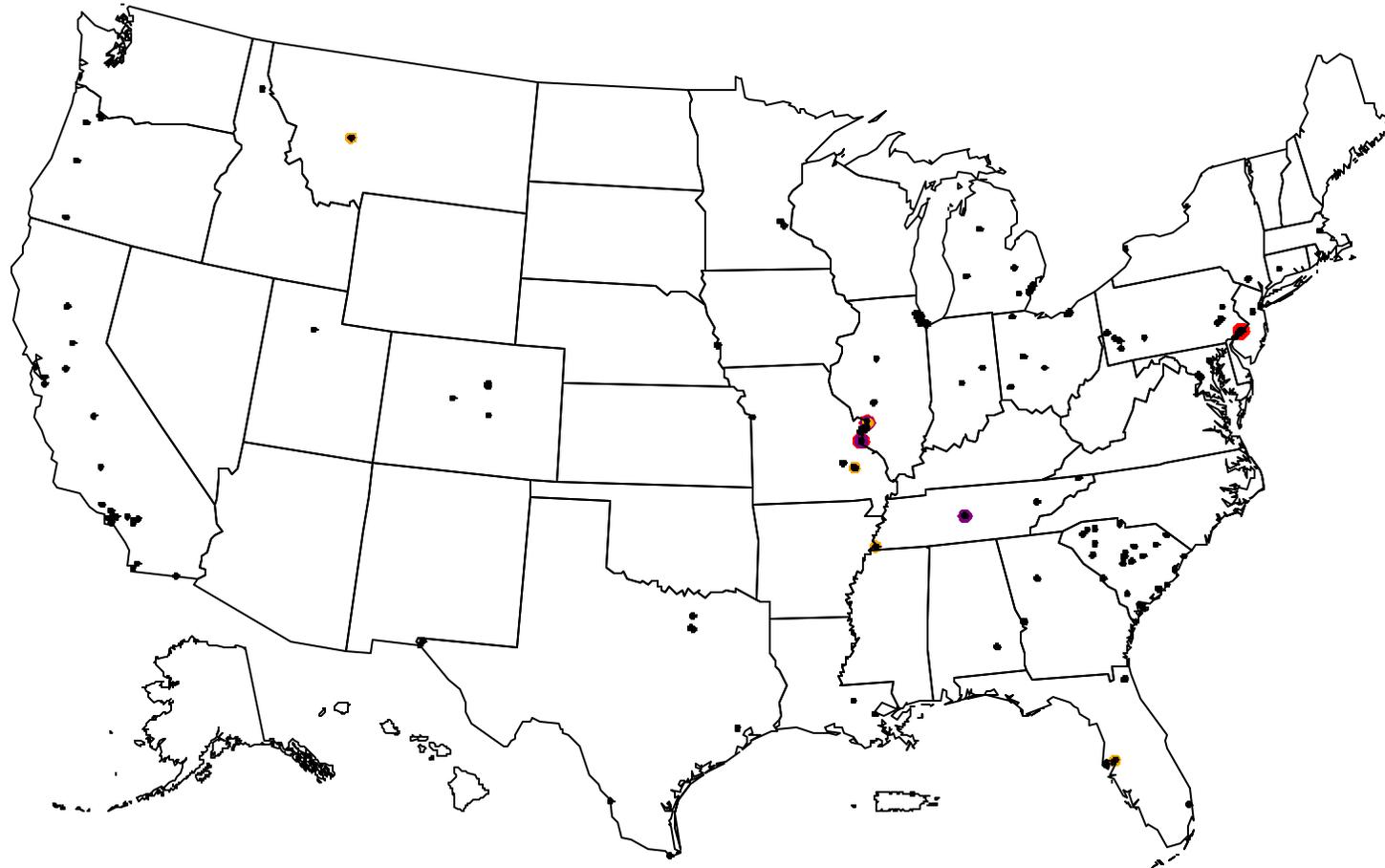


SO<sub>2</sub> 2nd Max Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# Pb Max Quarterly Average - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

Orange= 60-80%, Black= <60%

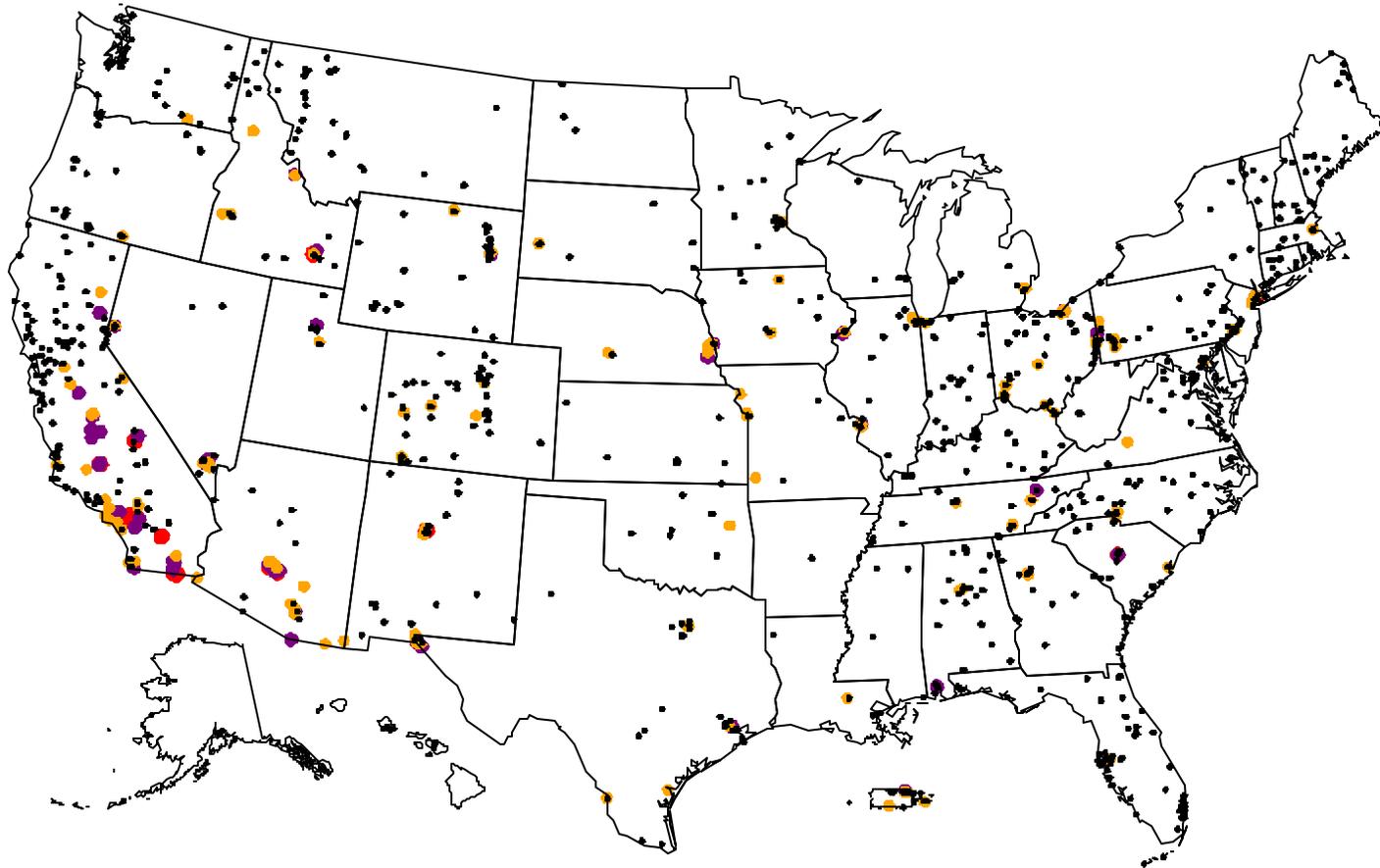


Pb Max Quarterly Average Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# PM10 Annual Mean - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

Orange= 60-80%, Black= <60%

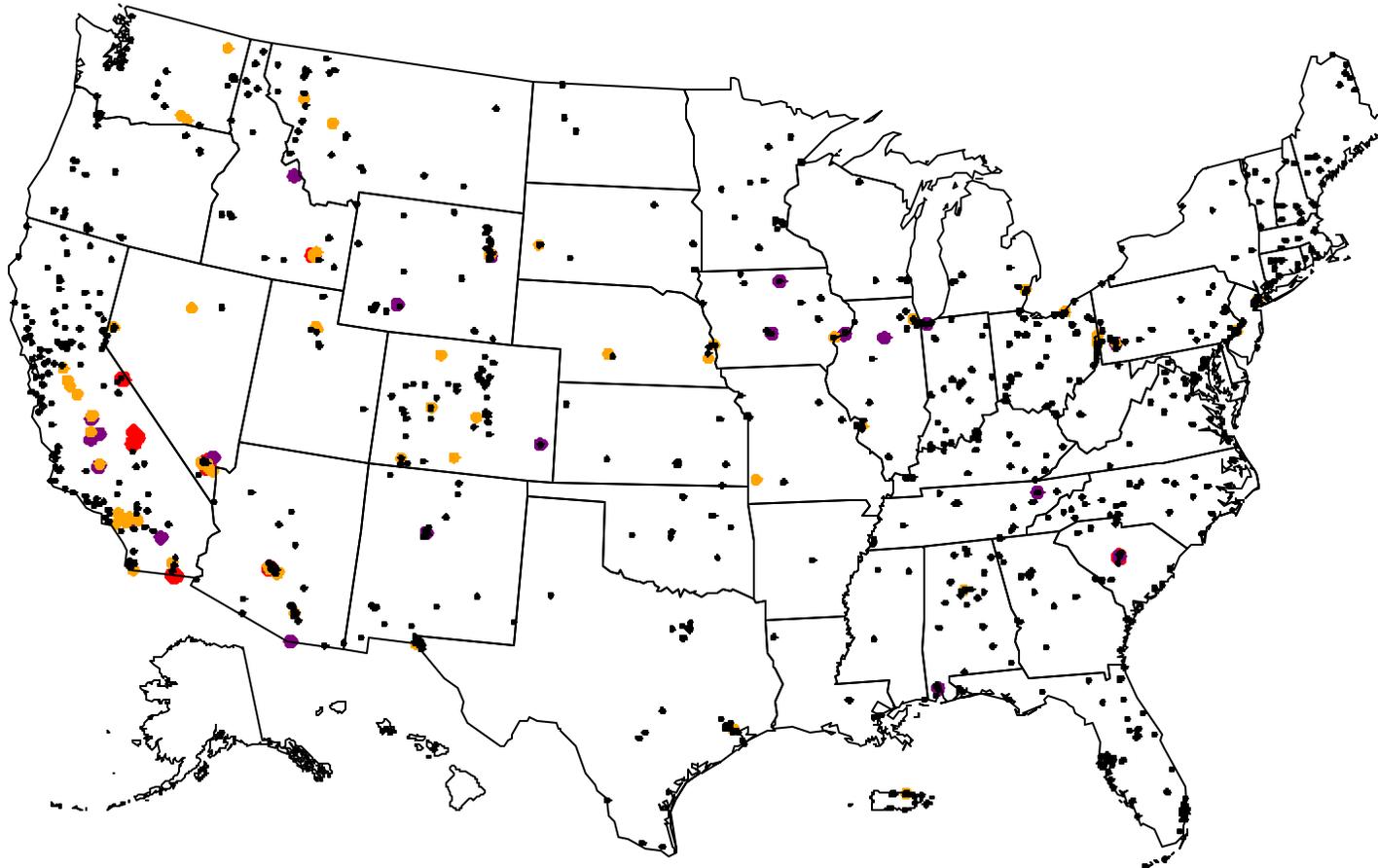


PM10 Annual Mean Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# PM10 2<sup>nd</sup> Max - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

Orange= 60-80%, Black= <60%

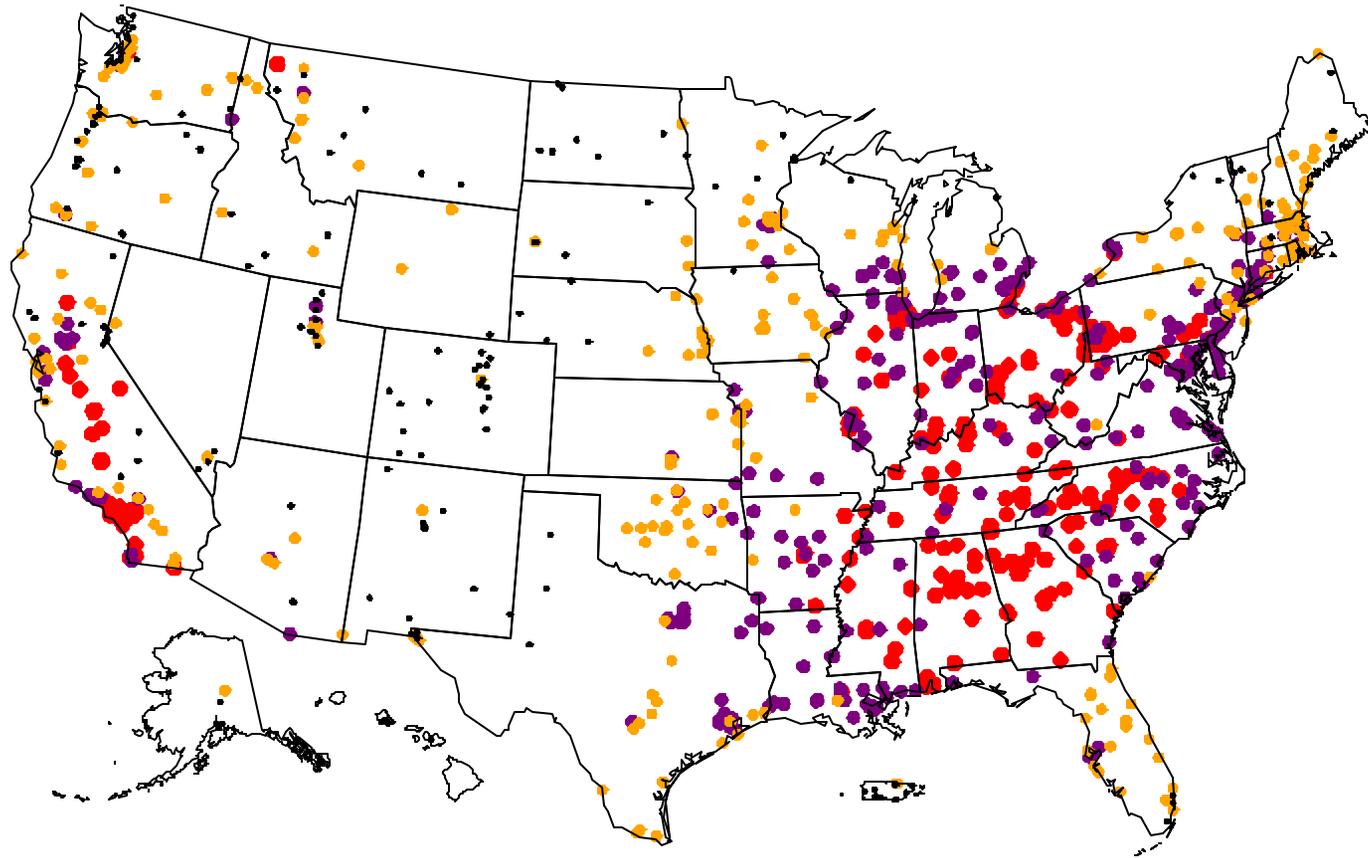


PM10 2nd Max Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# PM25 Annual Mean - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

Orange= 60-80%, Black= <60%

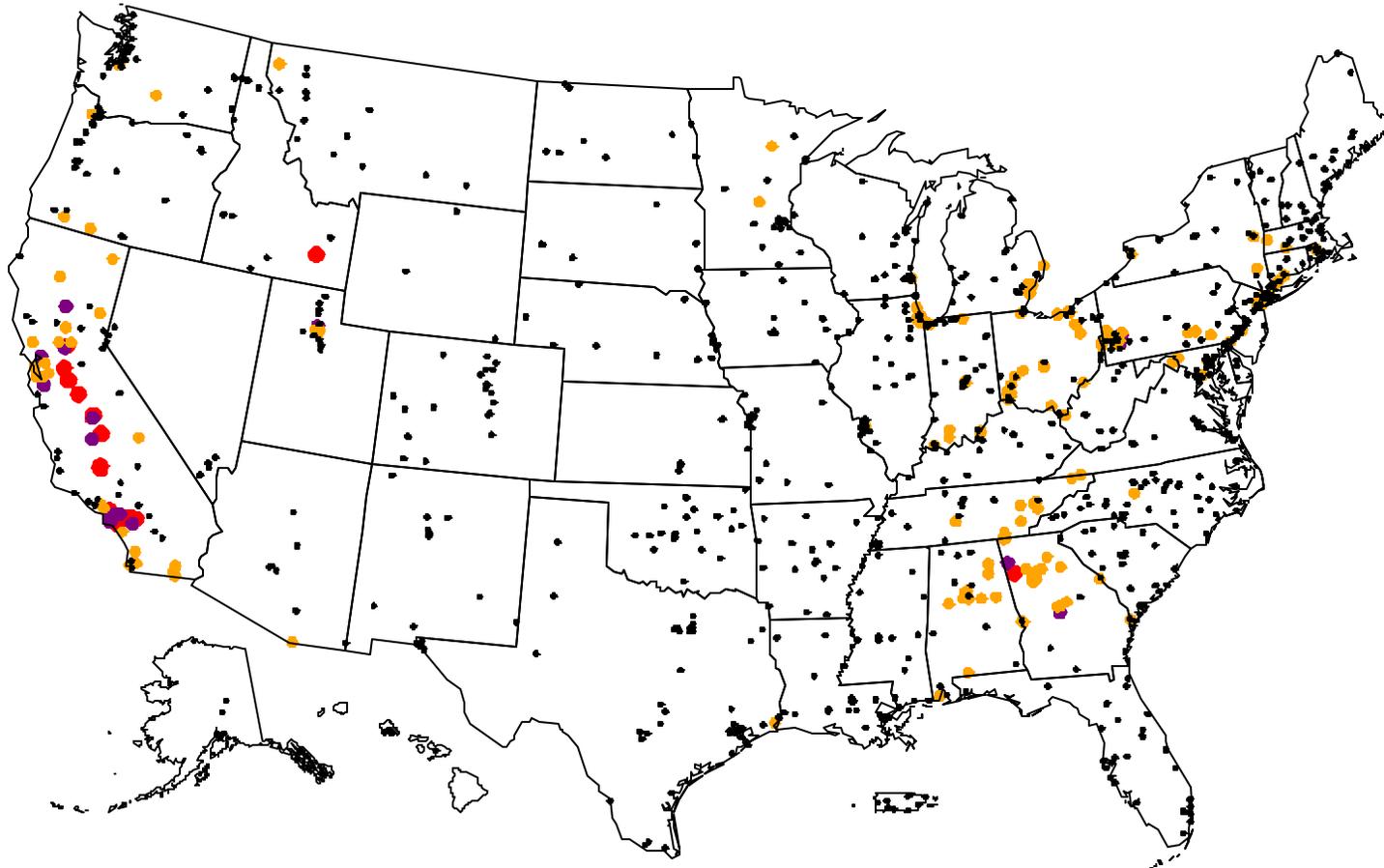


PM25 Annual Mean Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

# PM25 98<sup>th</sup> Percentile - Percent of NAAQS:

Red= >100%, Purple= 80-100%,

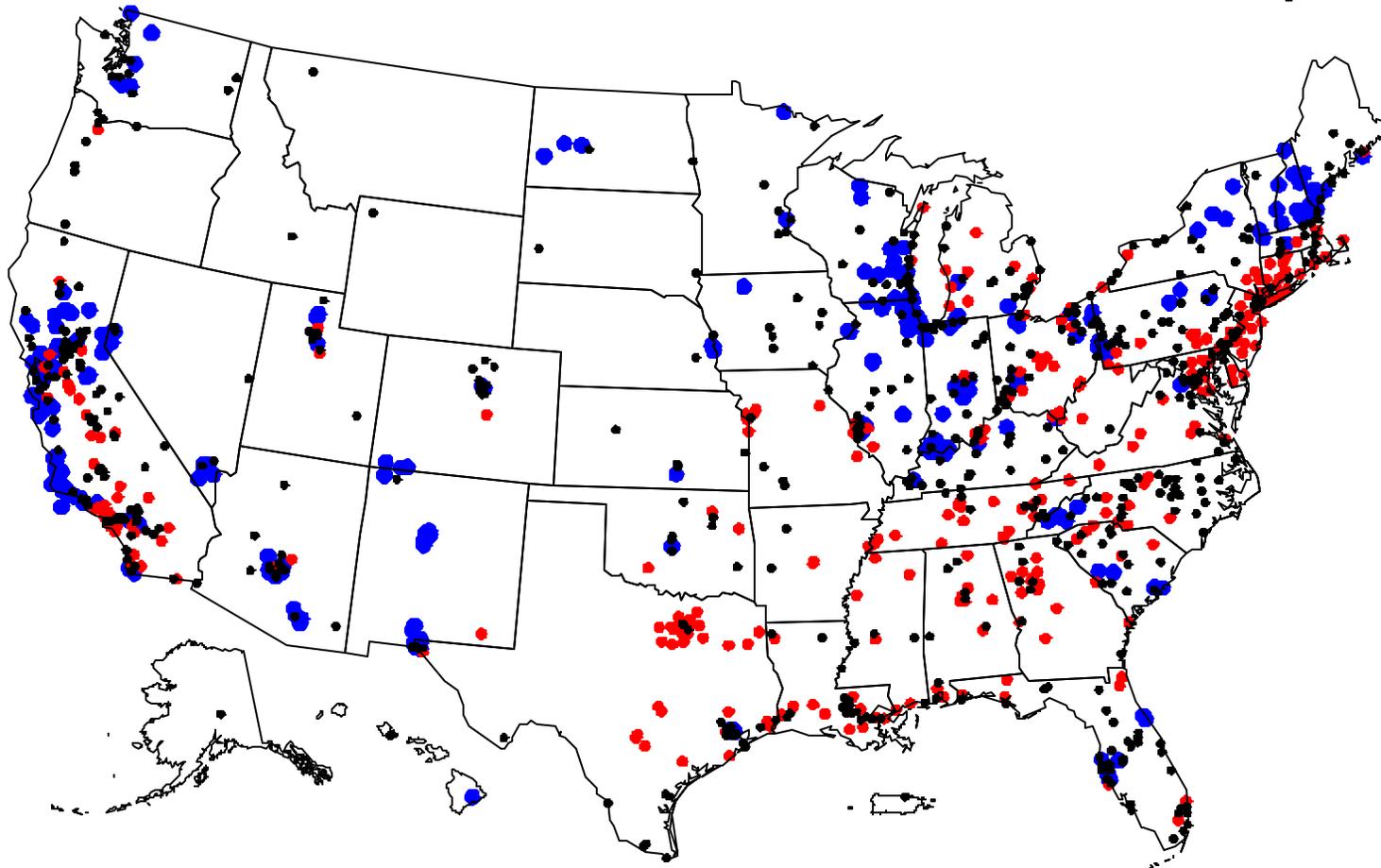
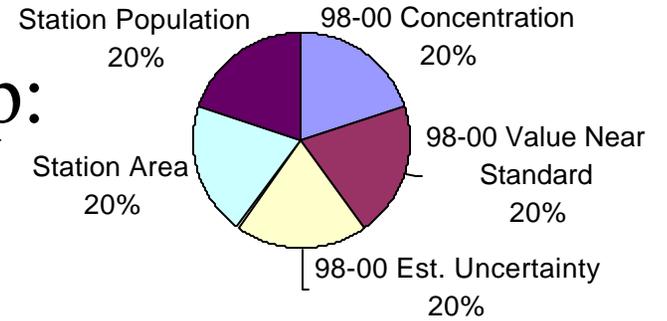
Orange= 60-80%, Black= <60%



PM25 98th Percentile Percent of NAAQS: Red= >100%. Purple= 80-100%. Orange= 60-80%. Black= <60%

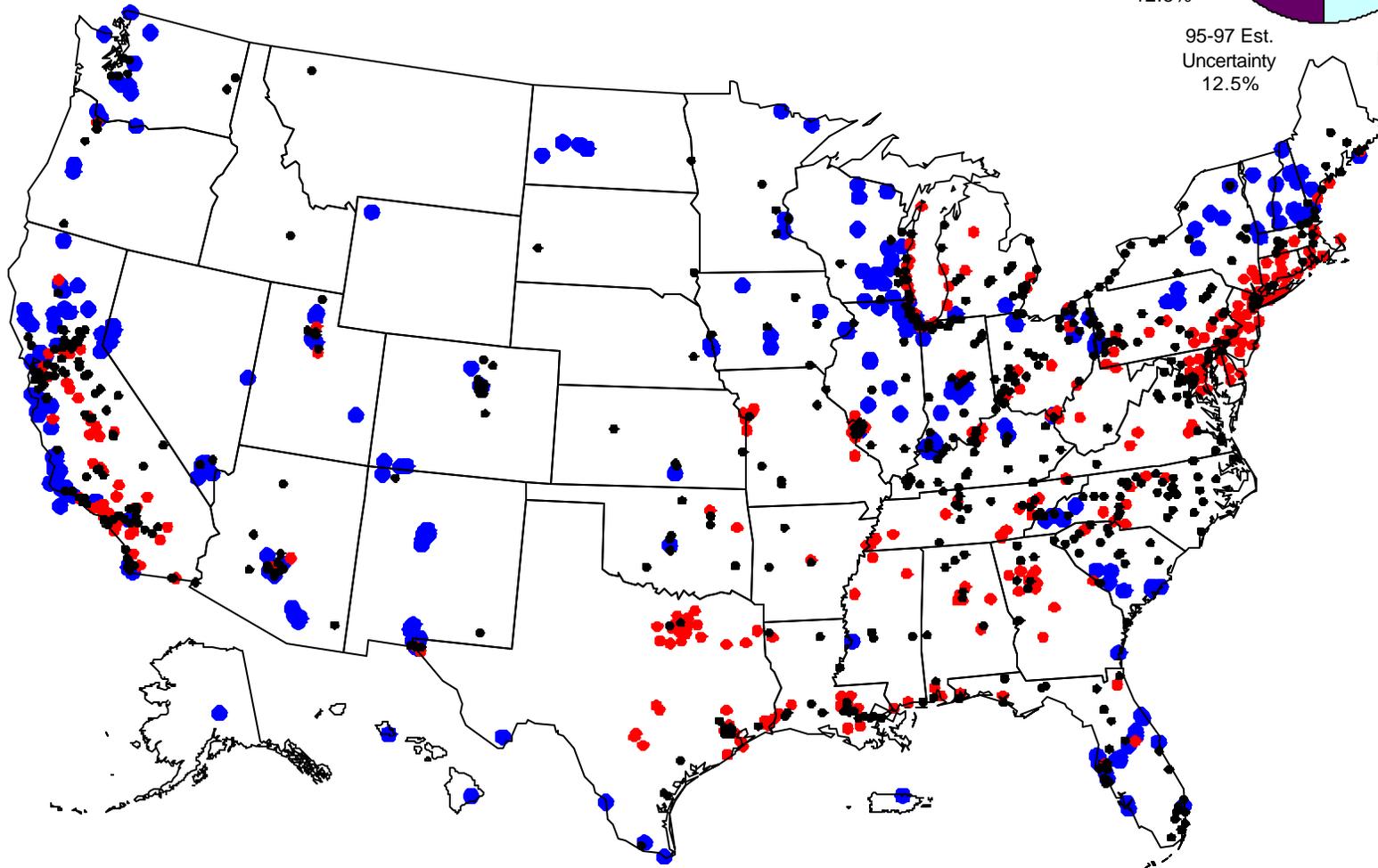
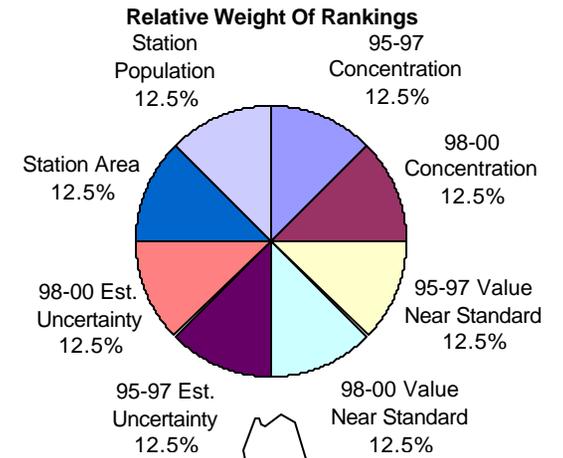
# 1-Hour O<sub>3</sub> Aggregate Ranking Map: Red=High Value, Blue=Low Value

## Relative Weight of Rankings



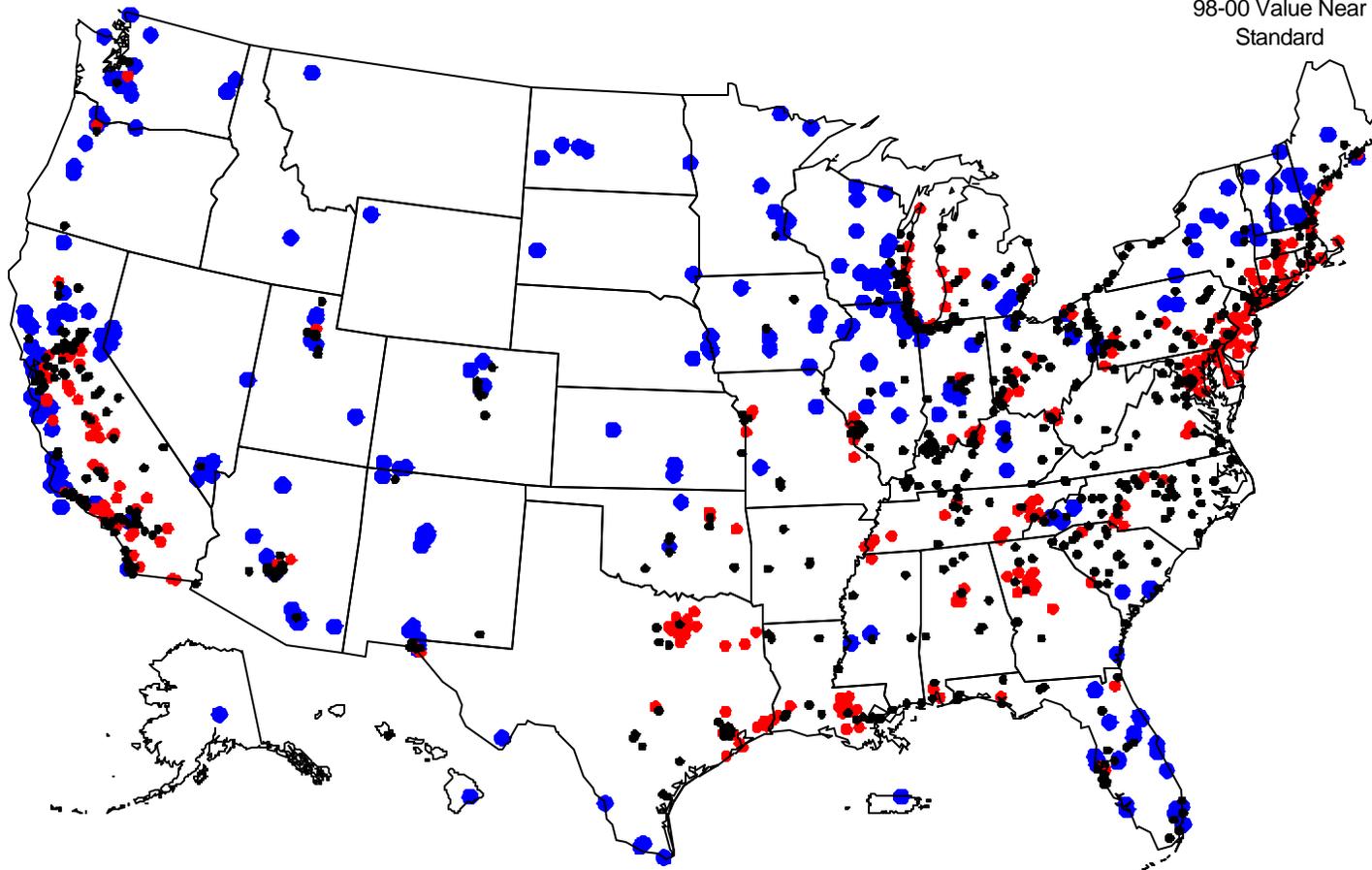
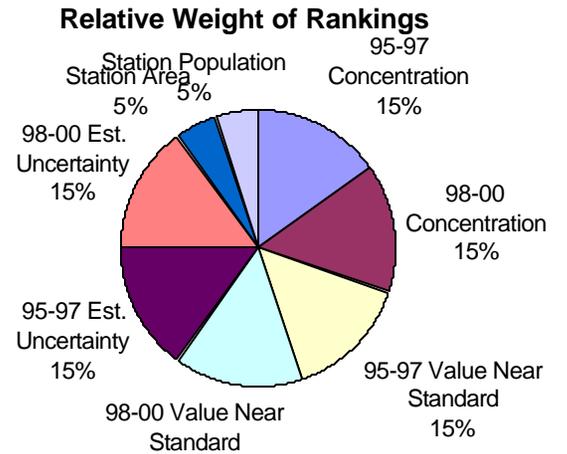
1hr O<sub>3</sub> Aggregate Ranking Map: Red=High Value. Blue=Low Value

# 1-Hour O3 Aggregate Ranking Map: Red=High Value, Blue=Low Value



1hr O3 Aggregate Ranking Map: Red=High Value. Blue=Low Value

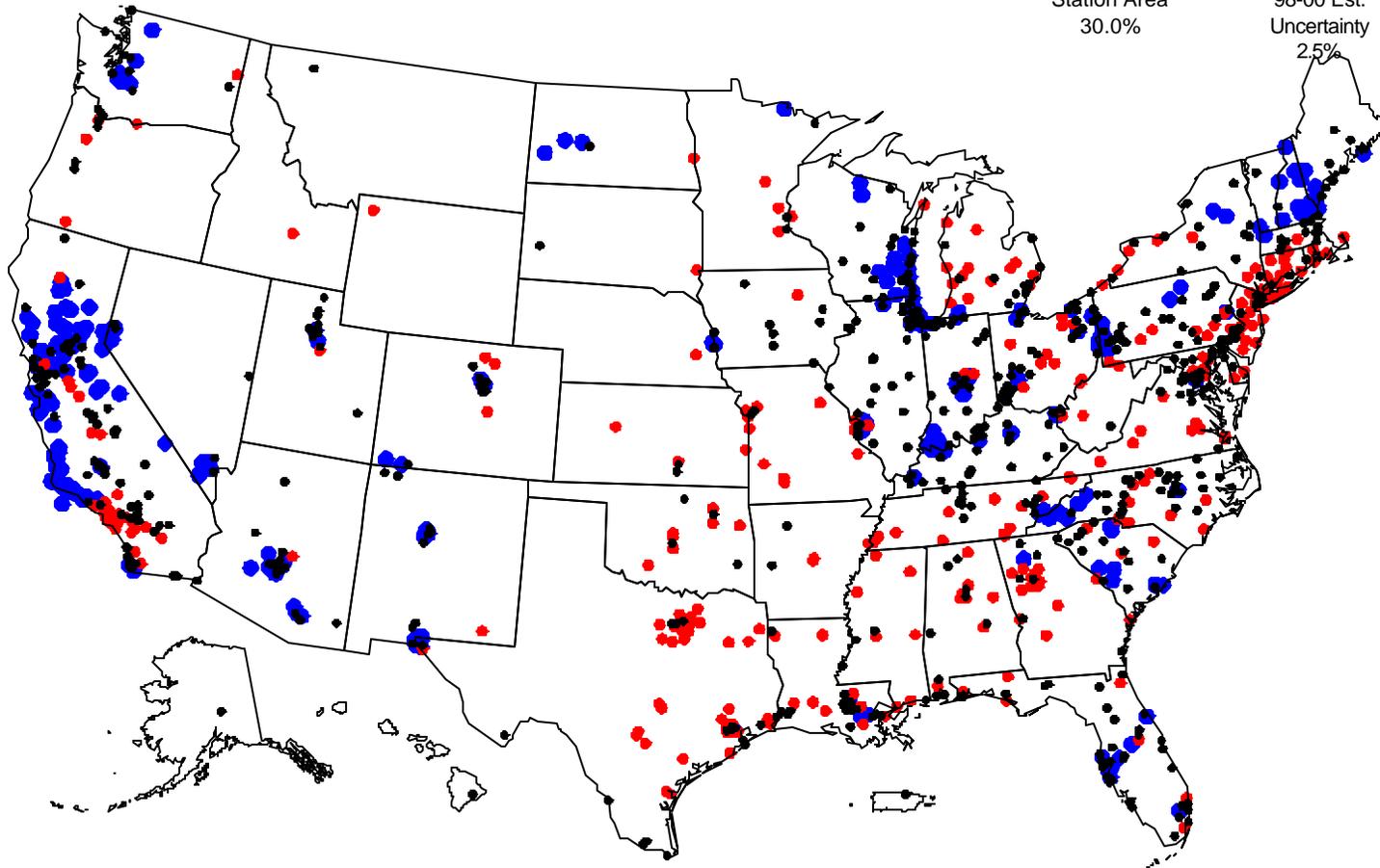
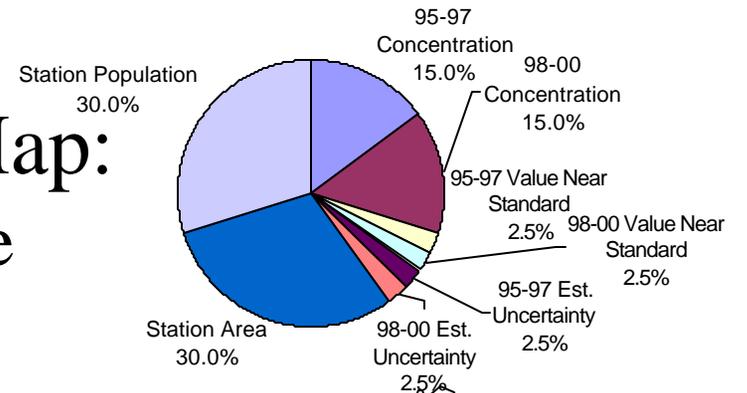
# 1-Hour O3 Aggregate Ranking Map: Red=High Value, Blue=Low Value



1hr O3 Aggregate Ranking Map A: Red=High Value, Blue=Low Value

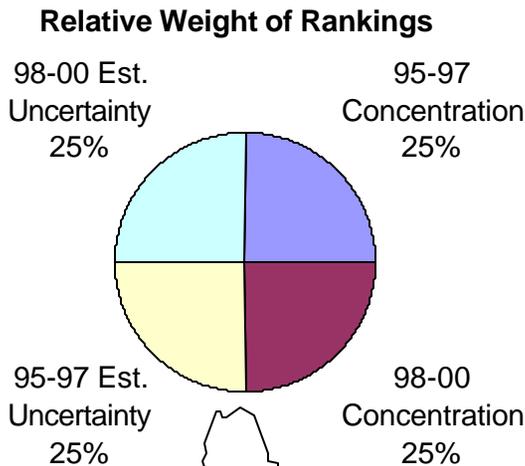
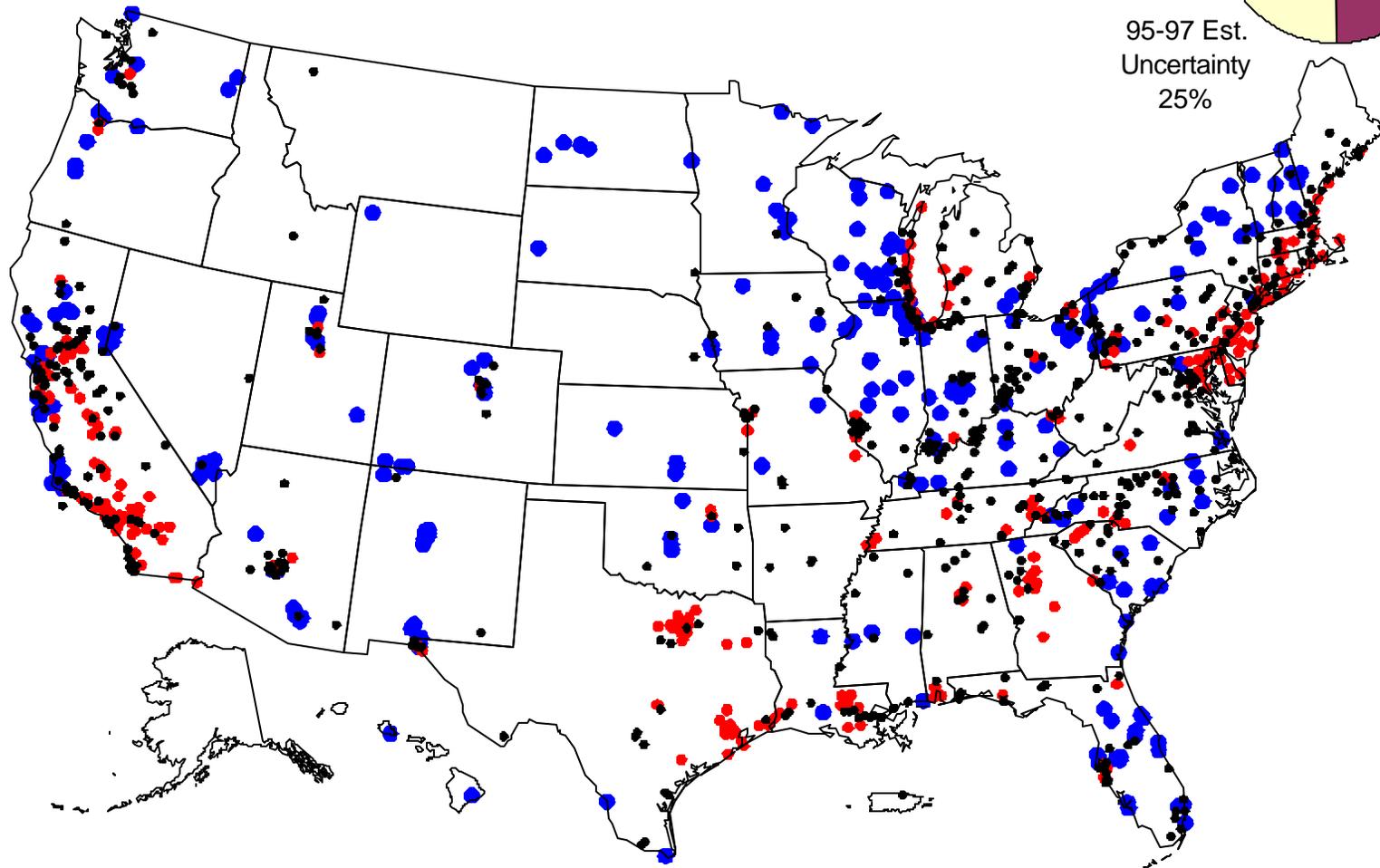
# 1-Hour O<sub>3</sub> Aggregate Ranking Map: Red=High Value, Blue=Low Value

Relative Weight of Rankings



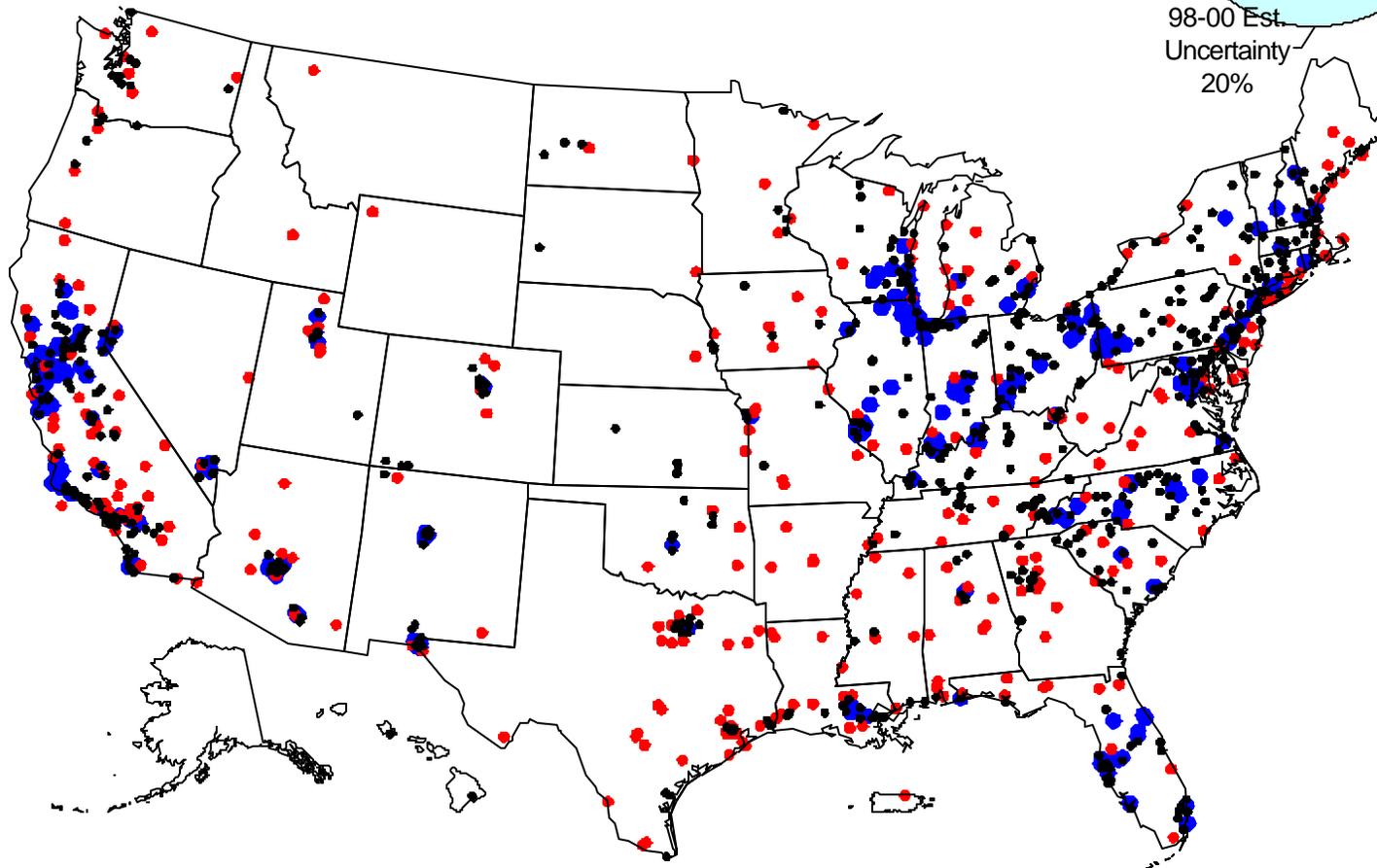
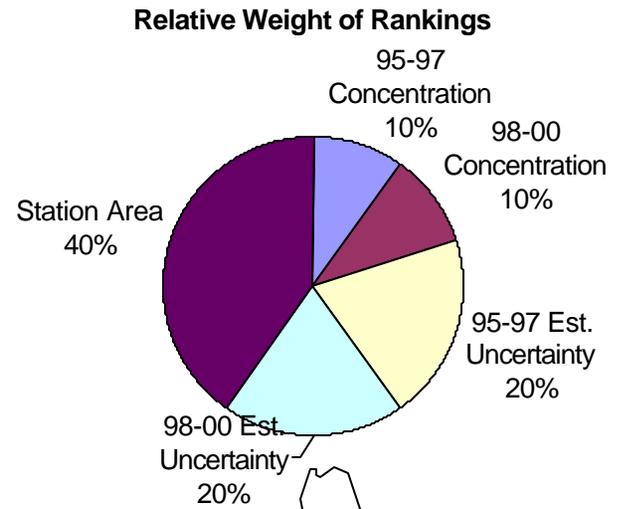
1hr O<sub>3</sub> Aggregate Ranking Map B: Red=High Value. Blue=Low Value

# 1-Hour O3 Aggregate Ranking Map: Red=High Value, Blue=Low Value



1hr O3 Aggregate Ranking Map C: Red=High Value. Blue=Low Value

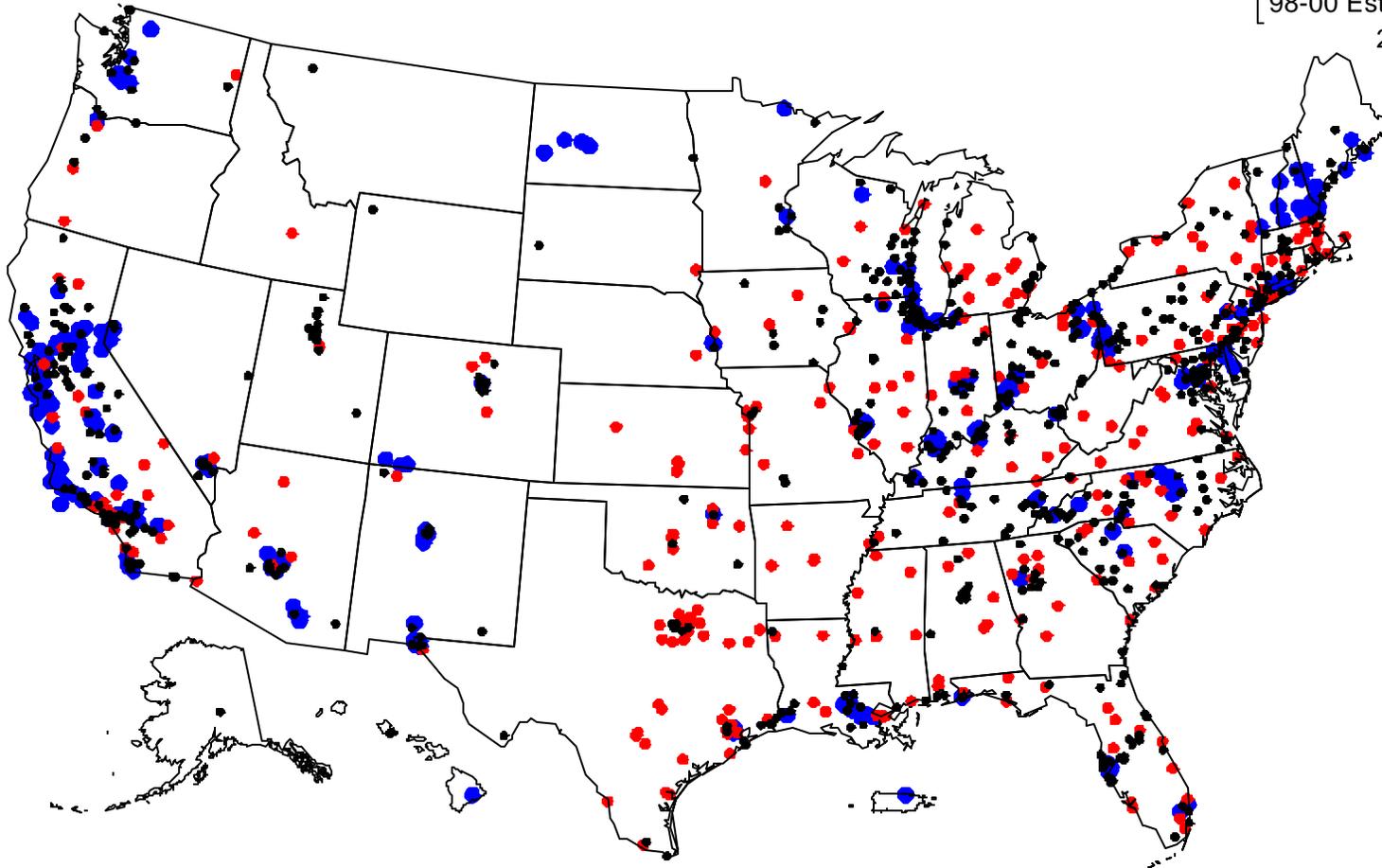
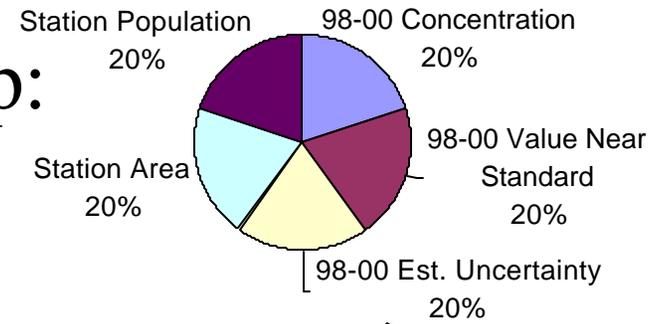
# 1-Hour O<sub>3</sub> Aggregate Ranking Map: Red=High Value, Blue=Low Value



1hr O<sub>3</sub> Aggregate Ranking Map D: Red=High Value. Blue=Low Value

# 8-Hour O<sub>3</sub> Aggregate Ranking Map: Red=High Value, Blue=Low Value

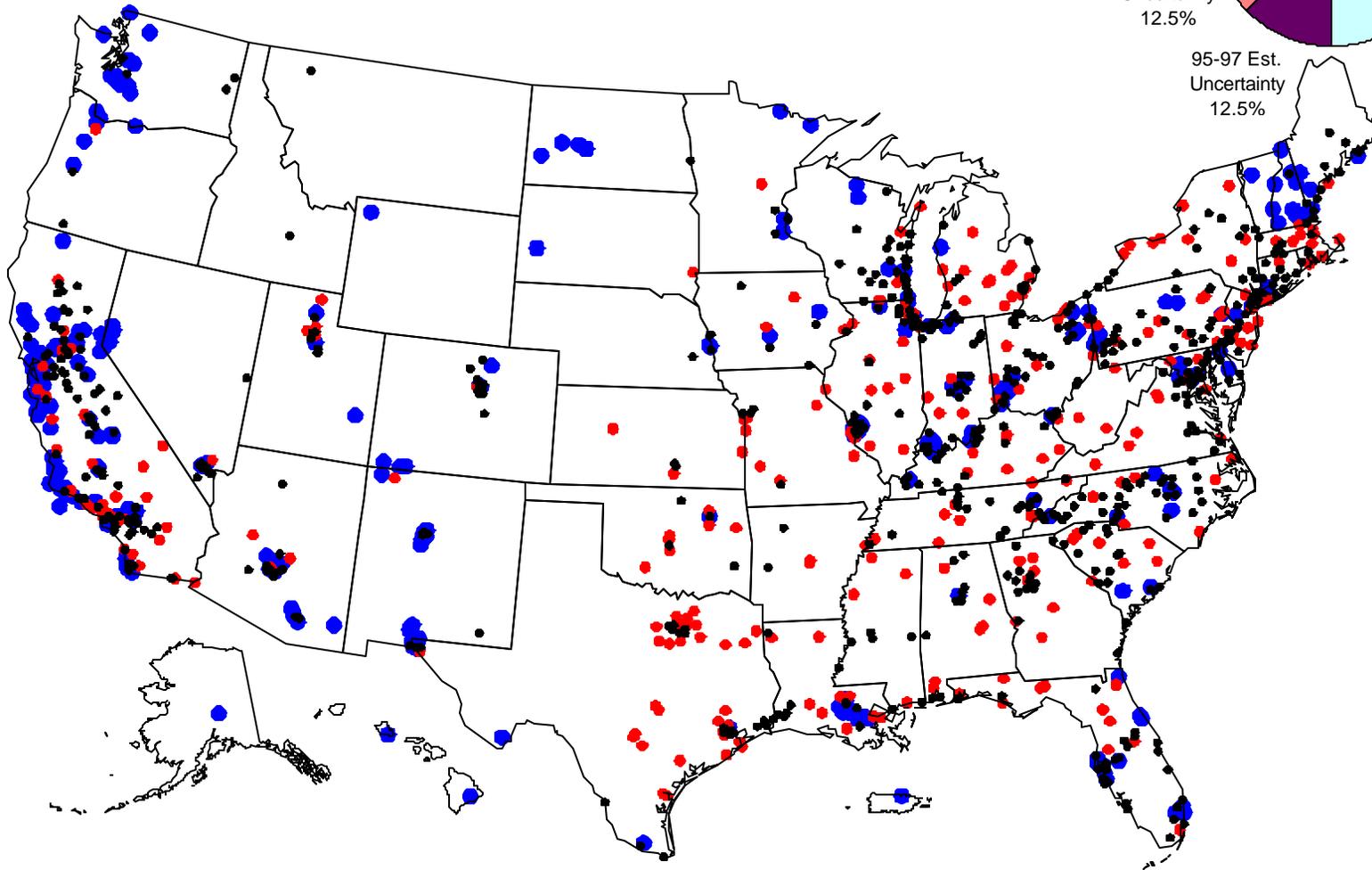
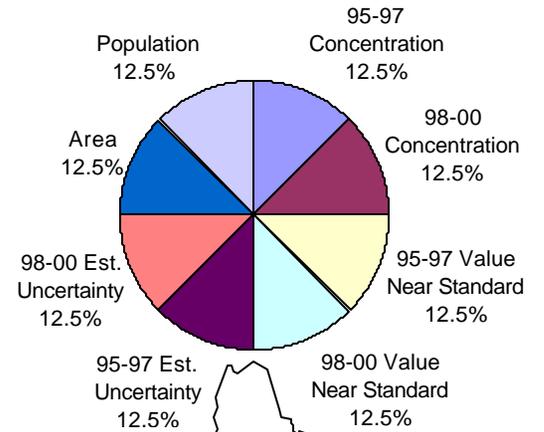
## Relative Weight of Rankings



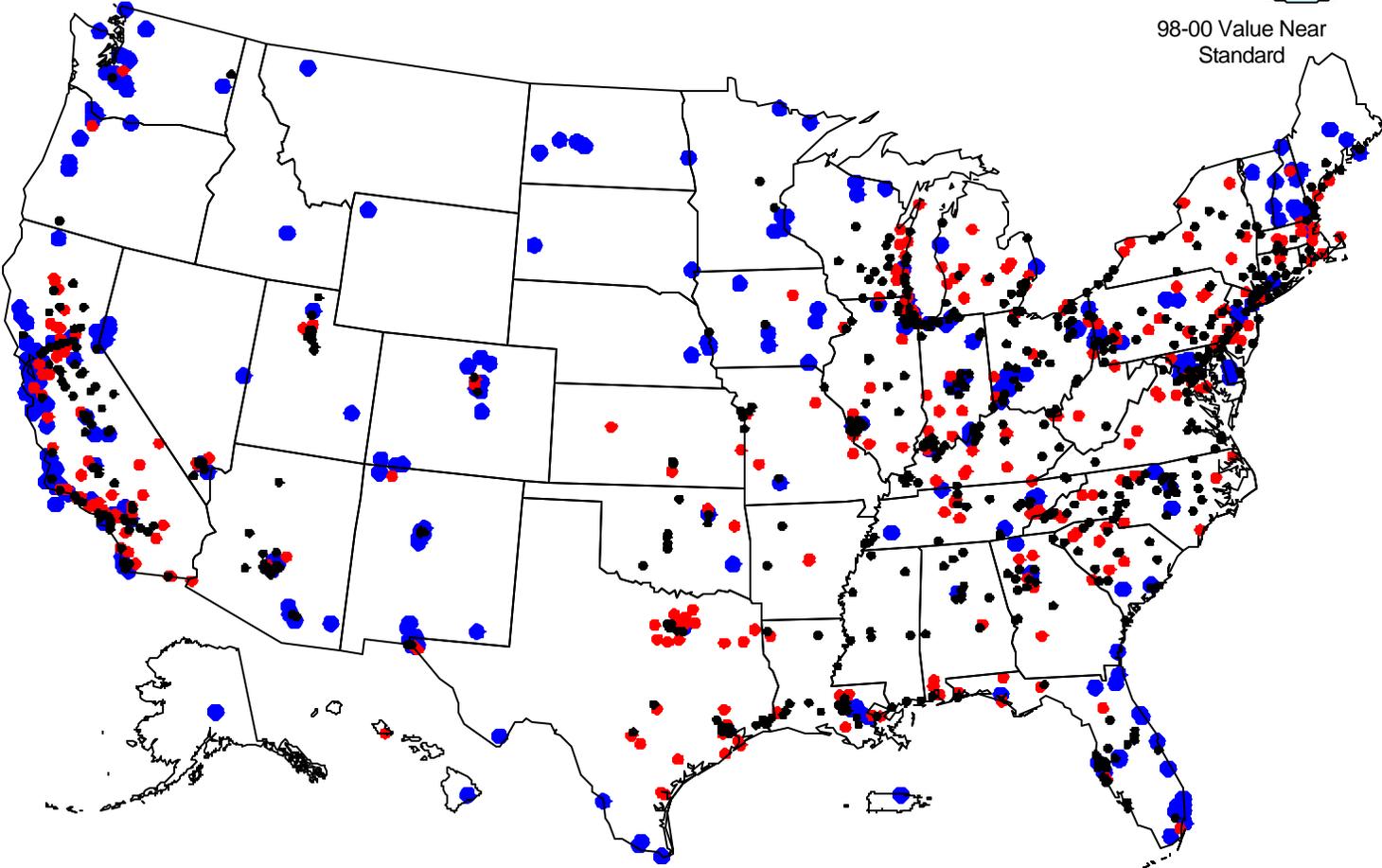
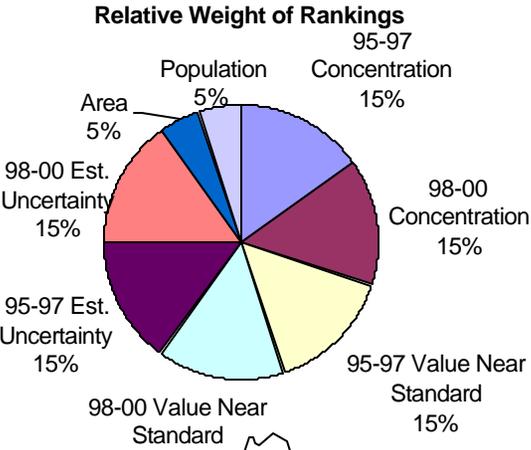
O<sub>3</sub> 8hr Aggregate Ranking Map: Red=High Value, Blue=Low Value

# 8-Hour O3 Aggregate Ranking Map: Red=High Value, Blue=Low Value

Relative Weight Of Rankings



# 8-Hour O3 Aggregate Ranking Map: Red=High Value, Blue=Low Value

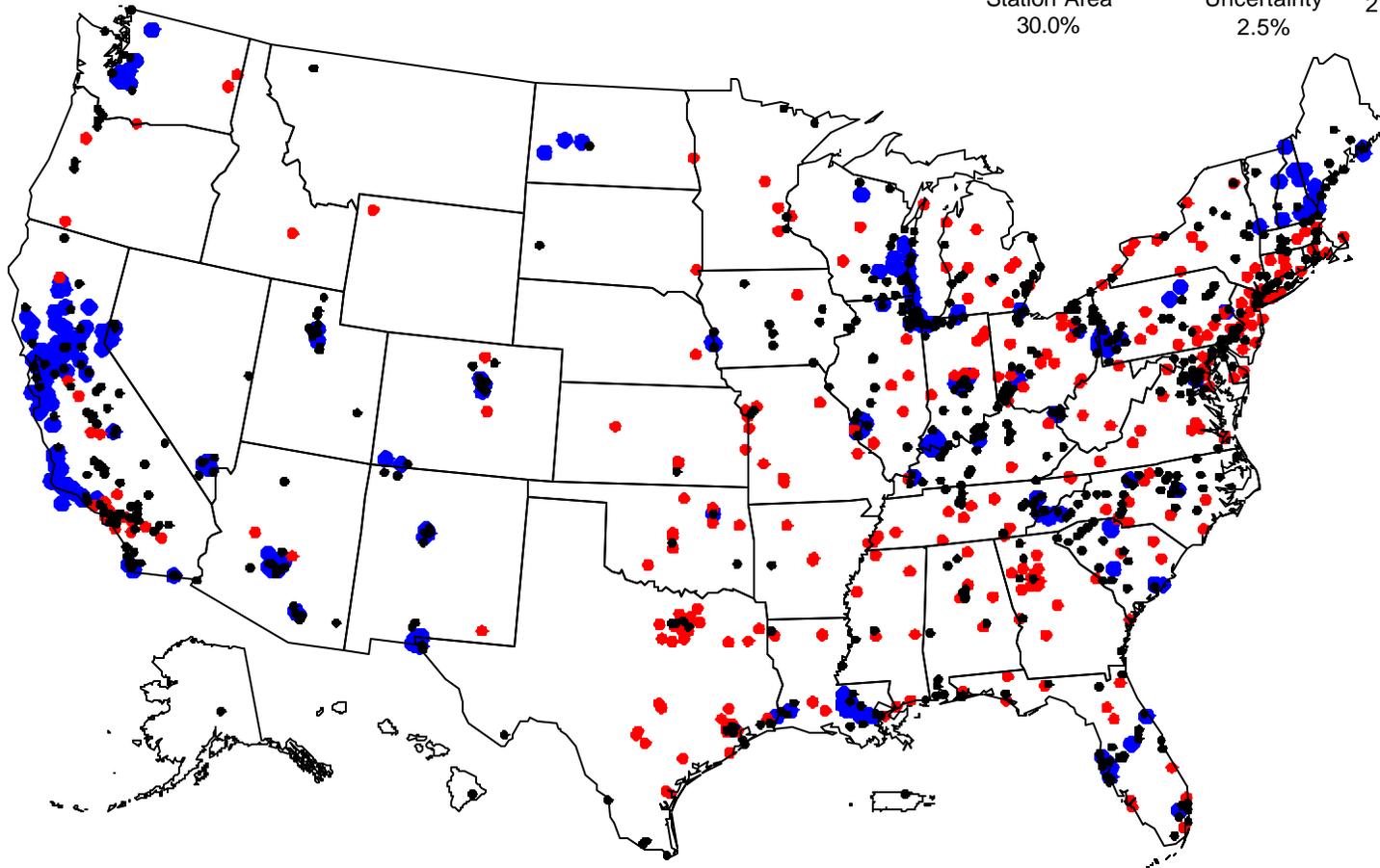
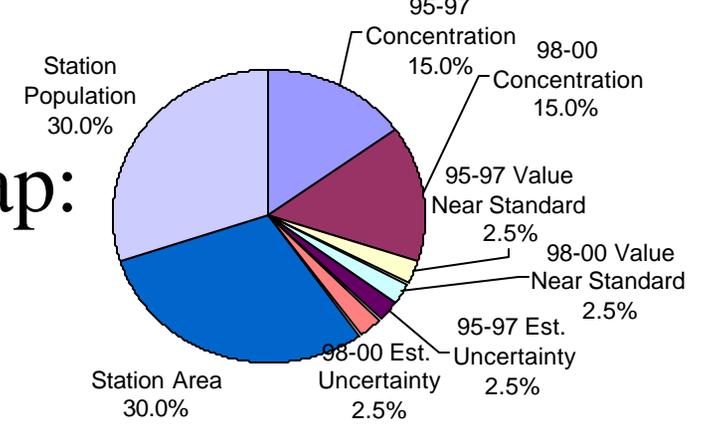


O3 8hr Aggregate Ranking Map A: Red=High Value, Blue=Low Value

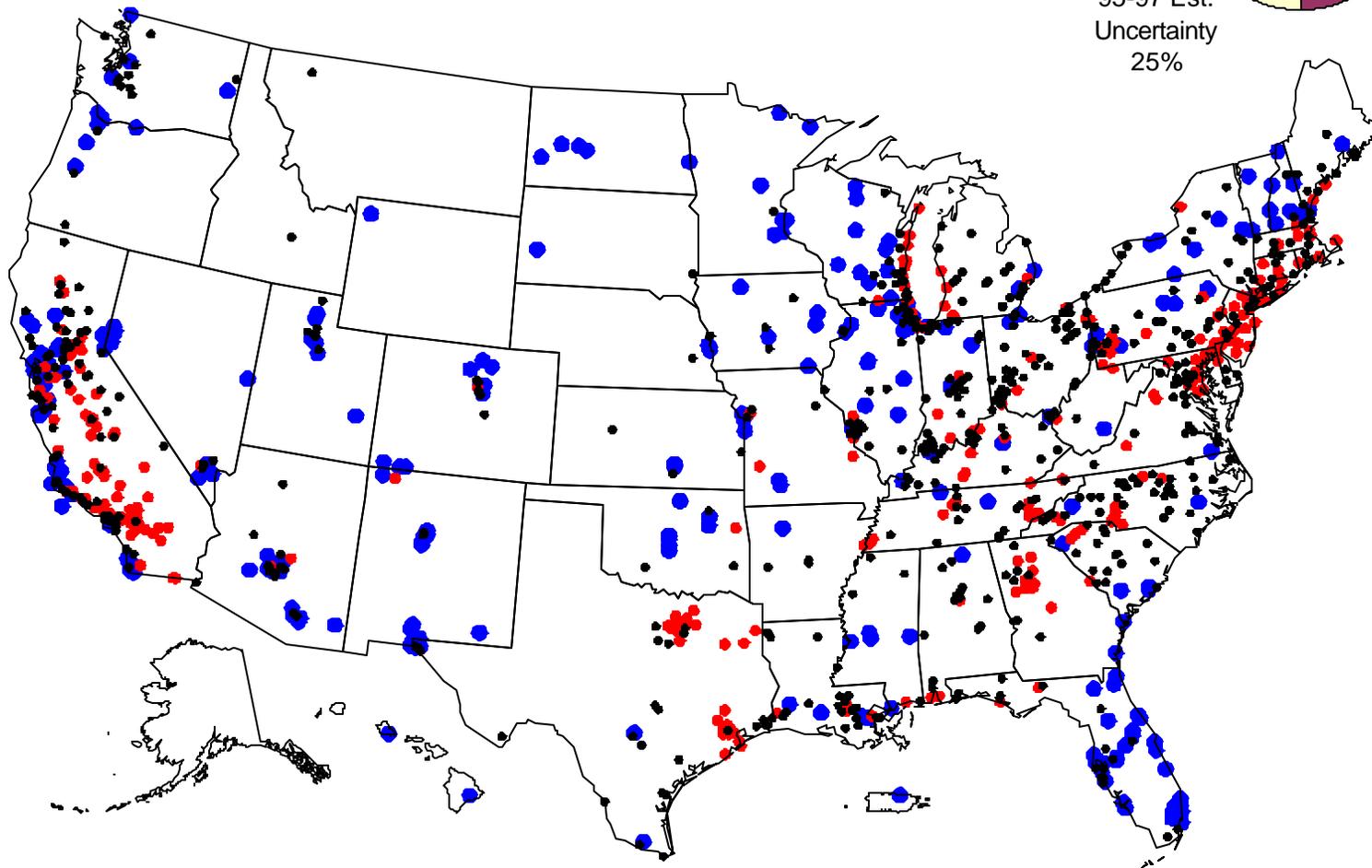
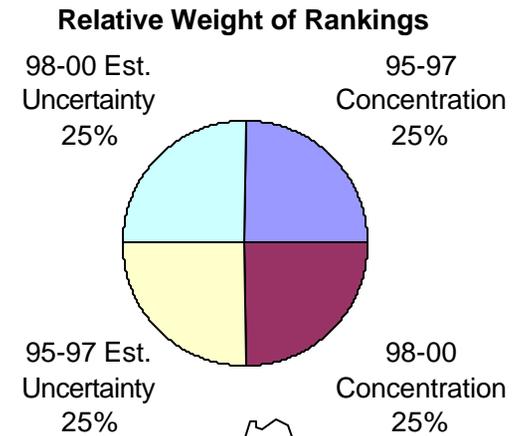
# 8-Hour O3 Aggregate Ranking Map:

Red=High Value, Blue=Low Value

**Relative Weight of Rankings**

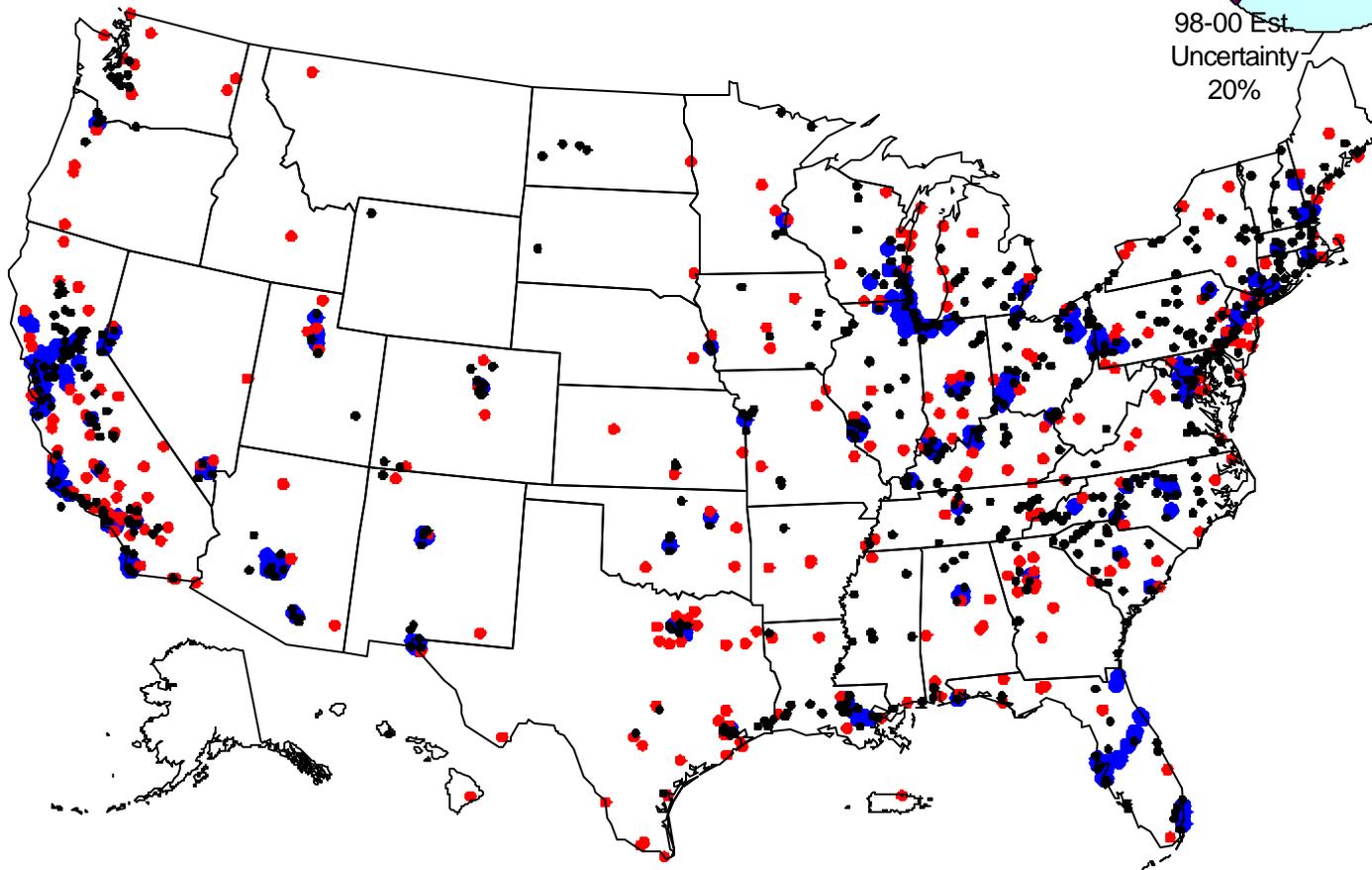
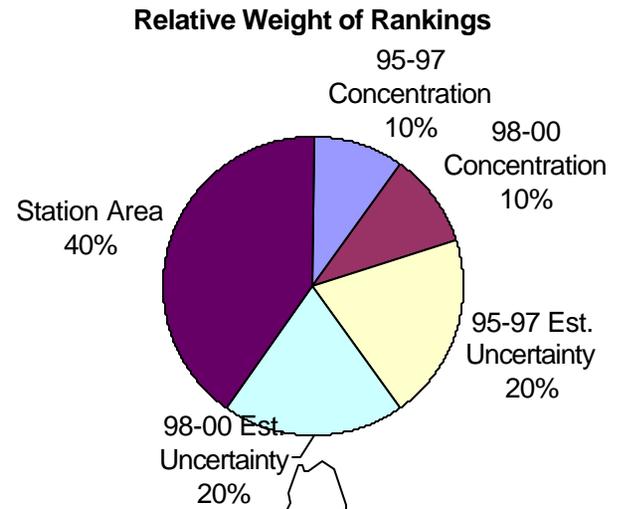


# 8-Hour O3 Aggregate Ranking Map: Red=High Value, Blue=Low Value



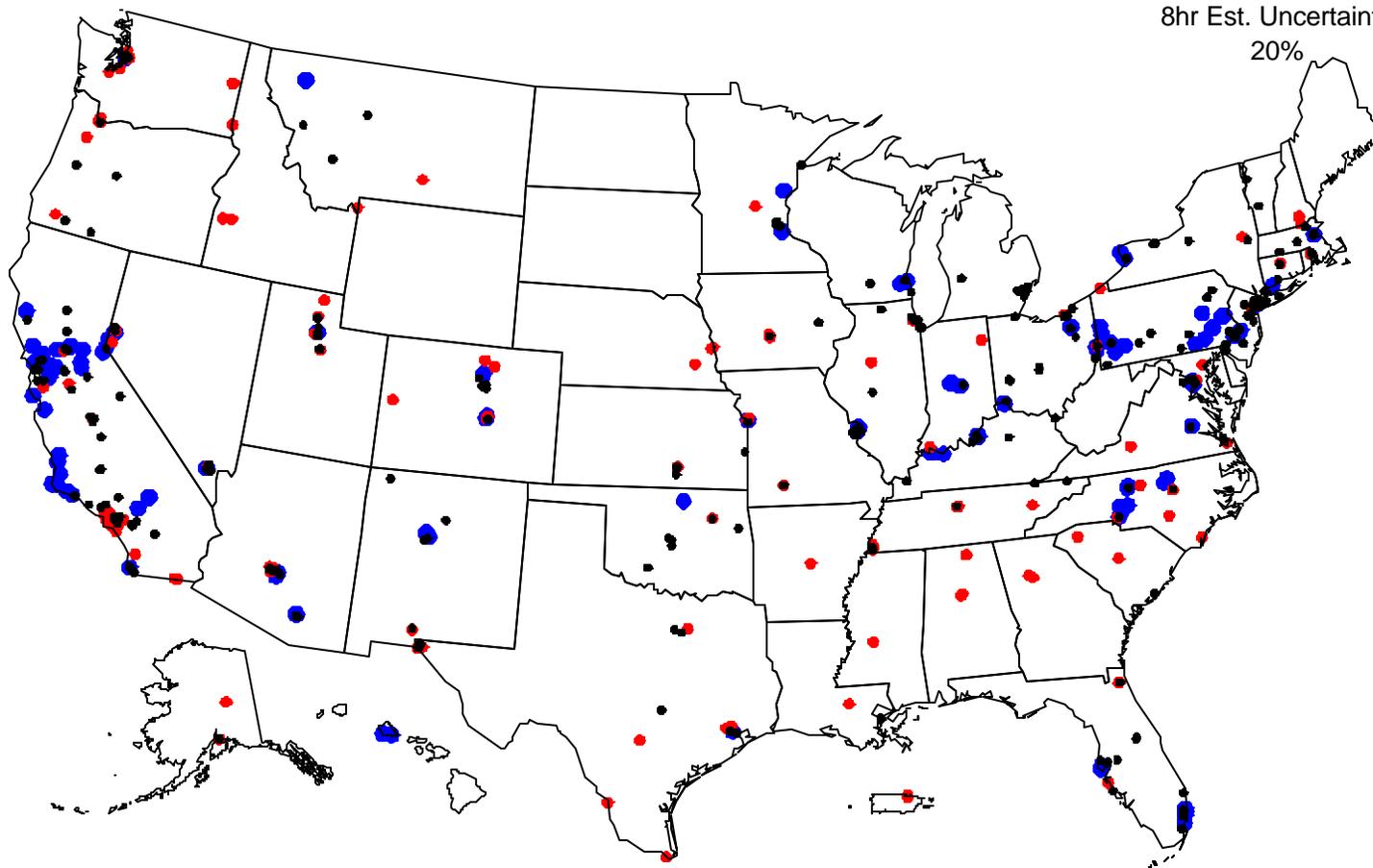
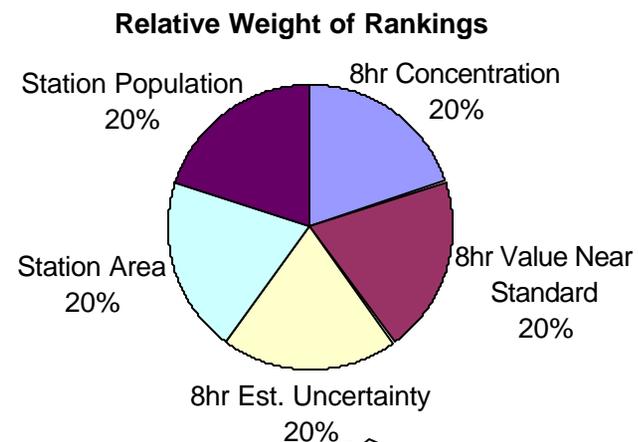
O3 8hr Aggregate Ranking Map C: Red=High Value, Blue=Low Value

# 8-Hour O<sub>3</sub> Aggregate Ranking Map: Red=High Value, Blue=Low Value



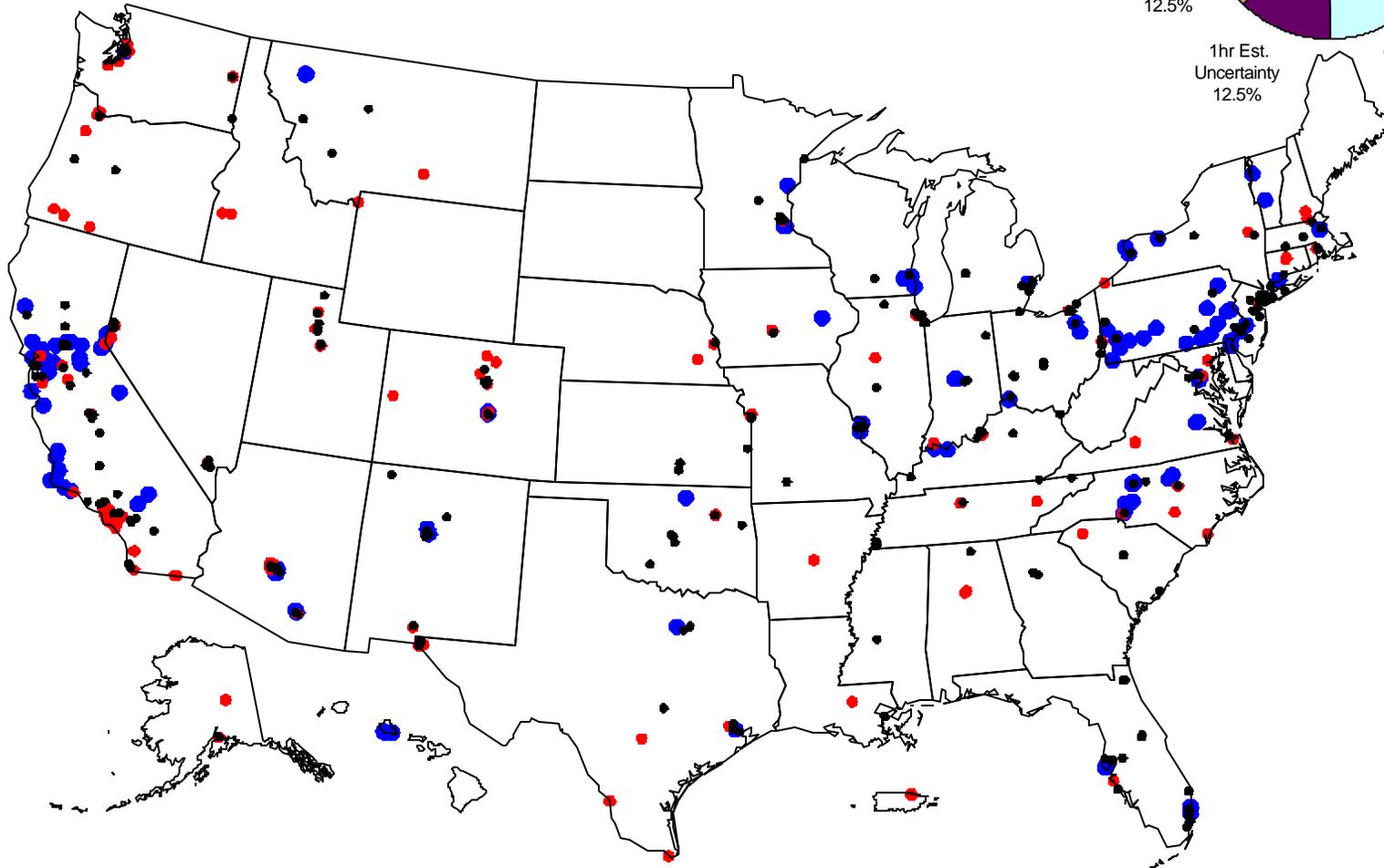
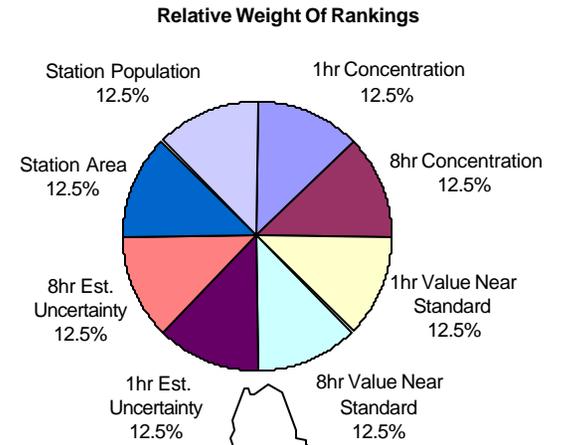
O<sub>3</sub> 8hr Aggregate Ranking Map D: Red=High Value, Blue=Low Value

# CO Aggregate Ranking Map: Red=High Value, Blue=Low Value



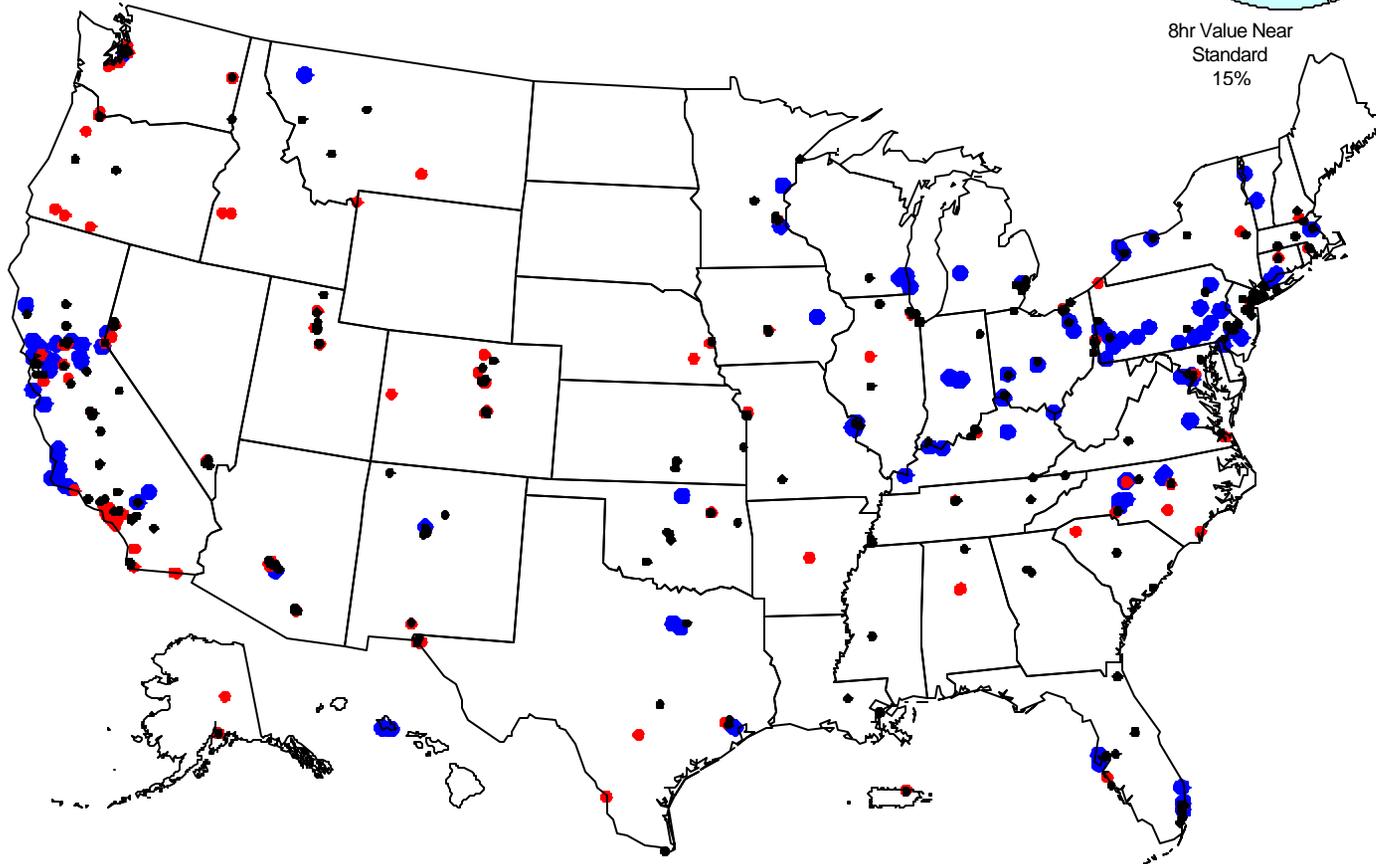
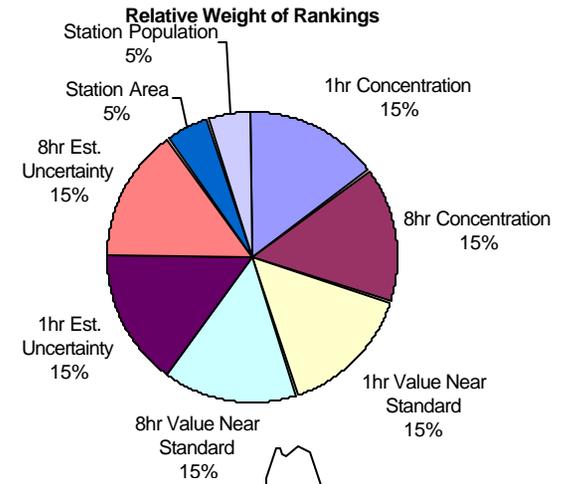
CO Aggregate Ranking Map: Red=High Value. Blue=Low Value

# CO Aggregate Ranking Map: Red=High Value, Blue=Low Value



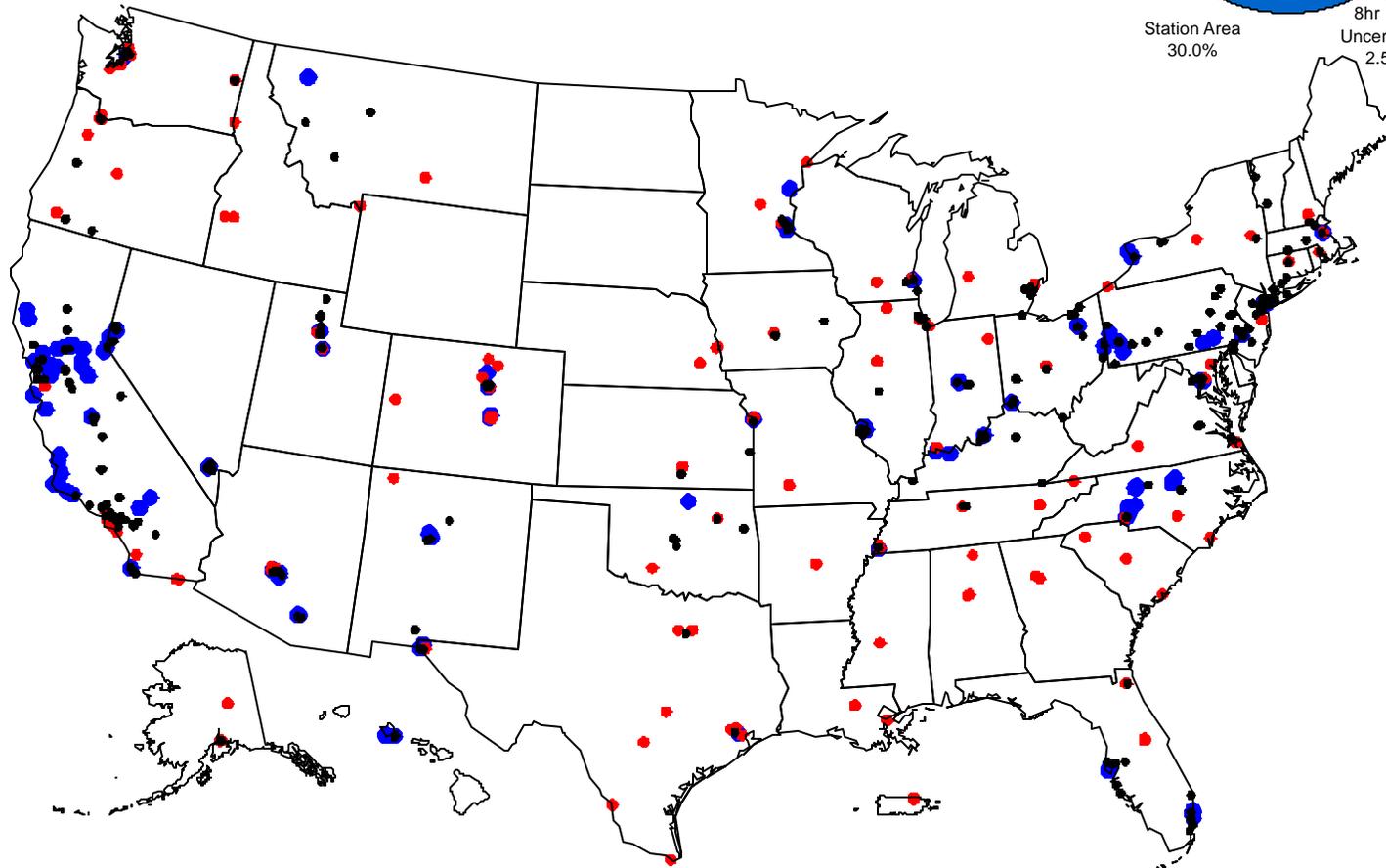
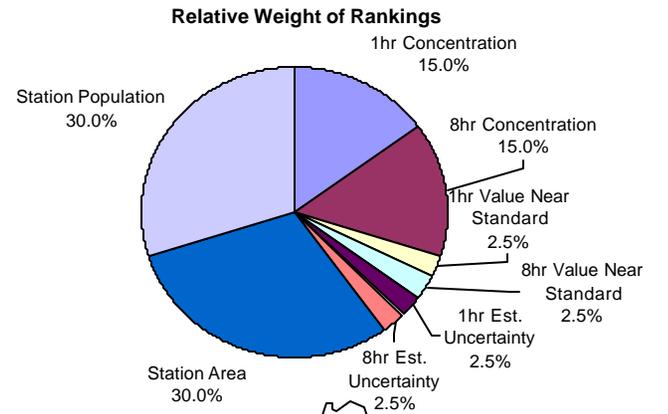
CO Aggregate Ranking Map: Red=High Value, Blue=Low Value

# CO Aggregate Ranking Map: Red=High Value, Blue=Low Value



CO Aggregate Ranking Map(A): Red=High Value. Blue=Low Value

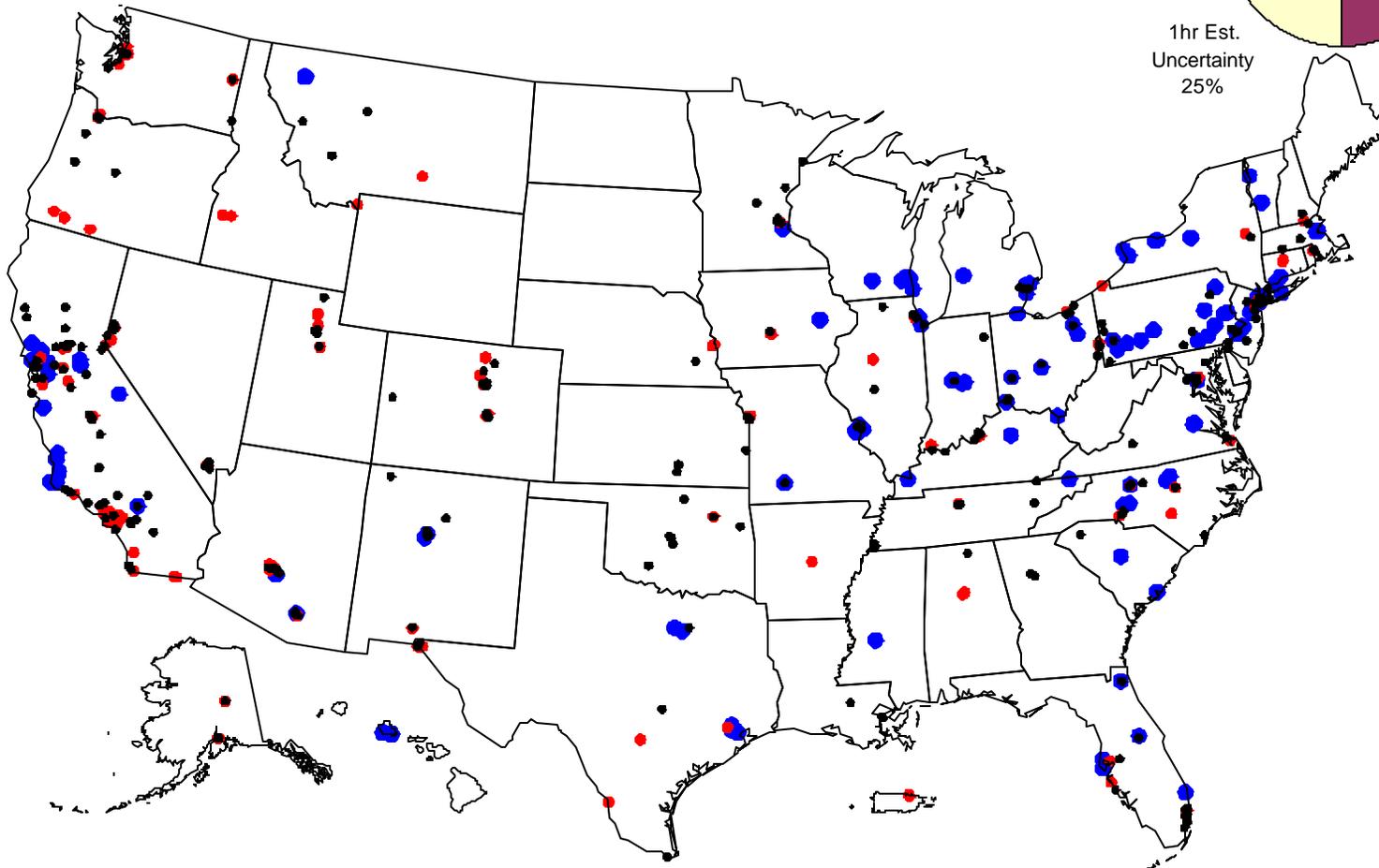
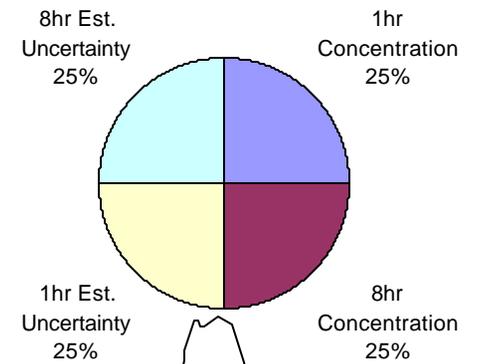
# CO Aggregate Ranking Map: Red=High Value, Blue=Low Value



CO Aggregate Ranking Map(B): Red=High Value, Blue=Low Value

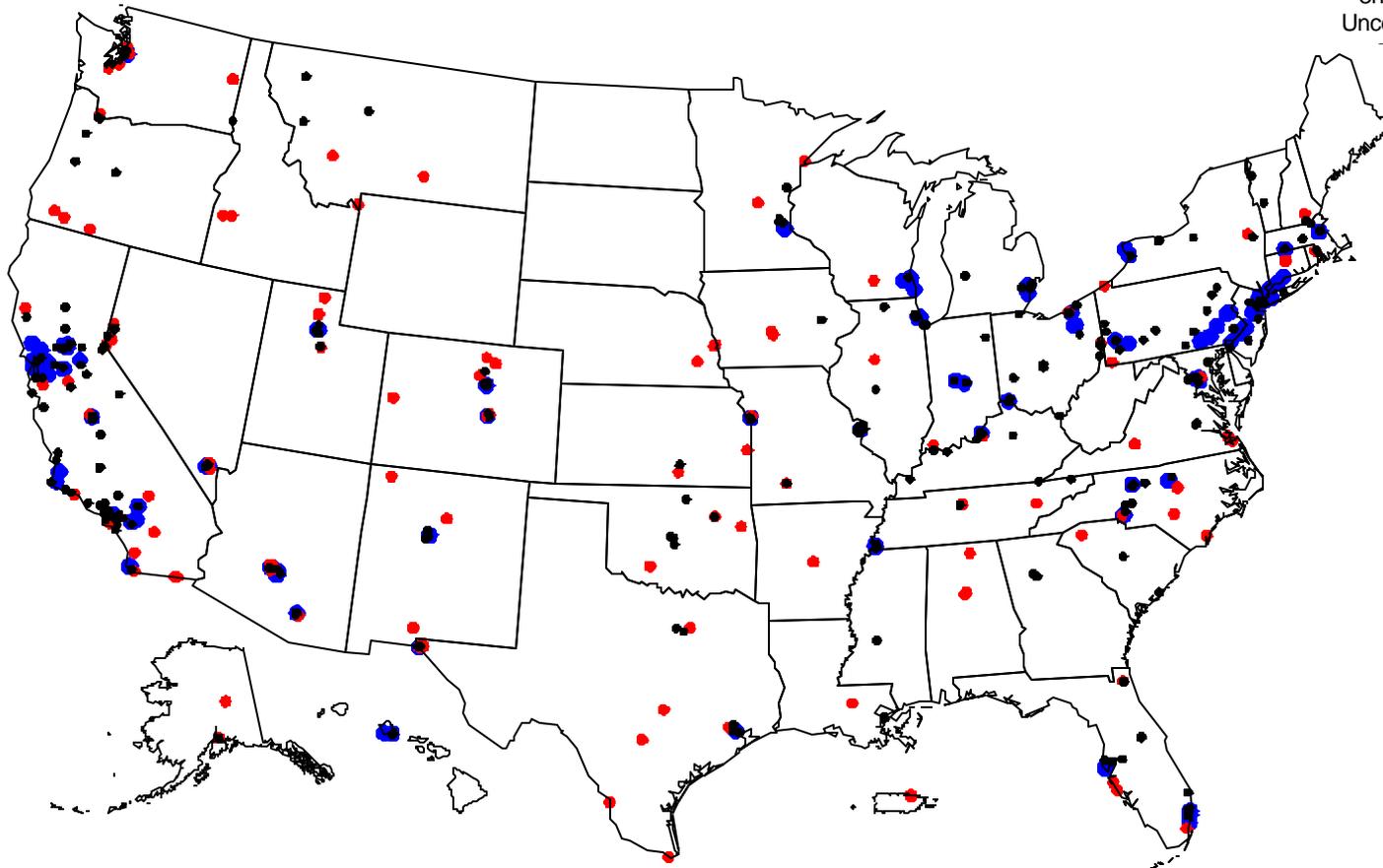
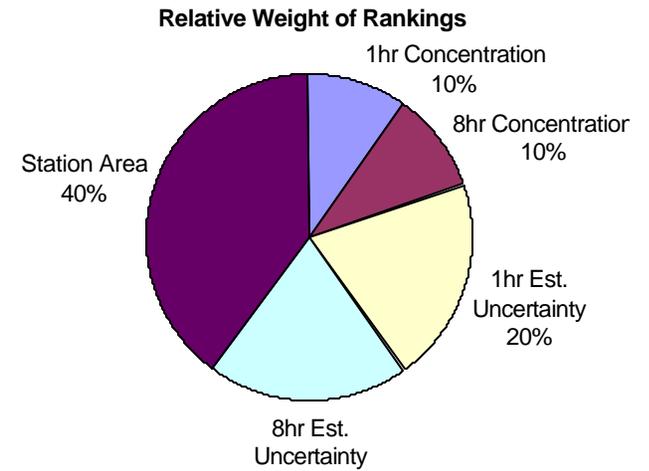
# CO Aggregate Ranking Map: Red=High Value, Blue=Low Value

Relative Weight of Rankings



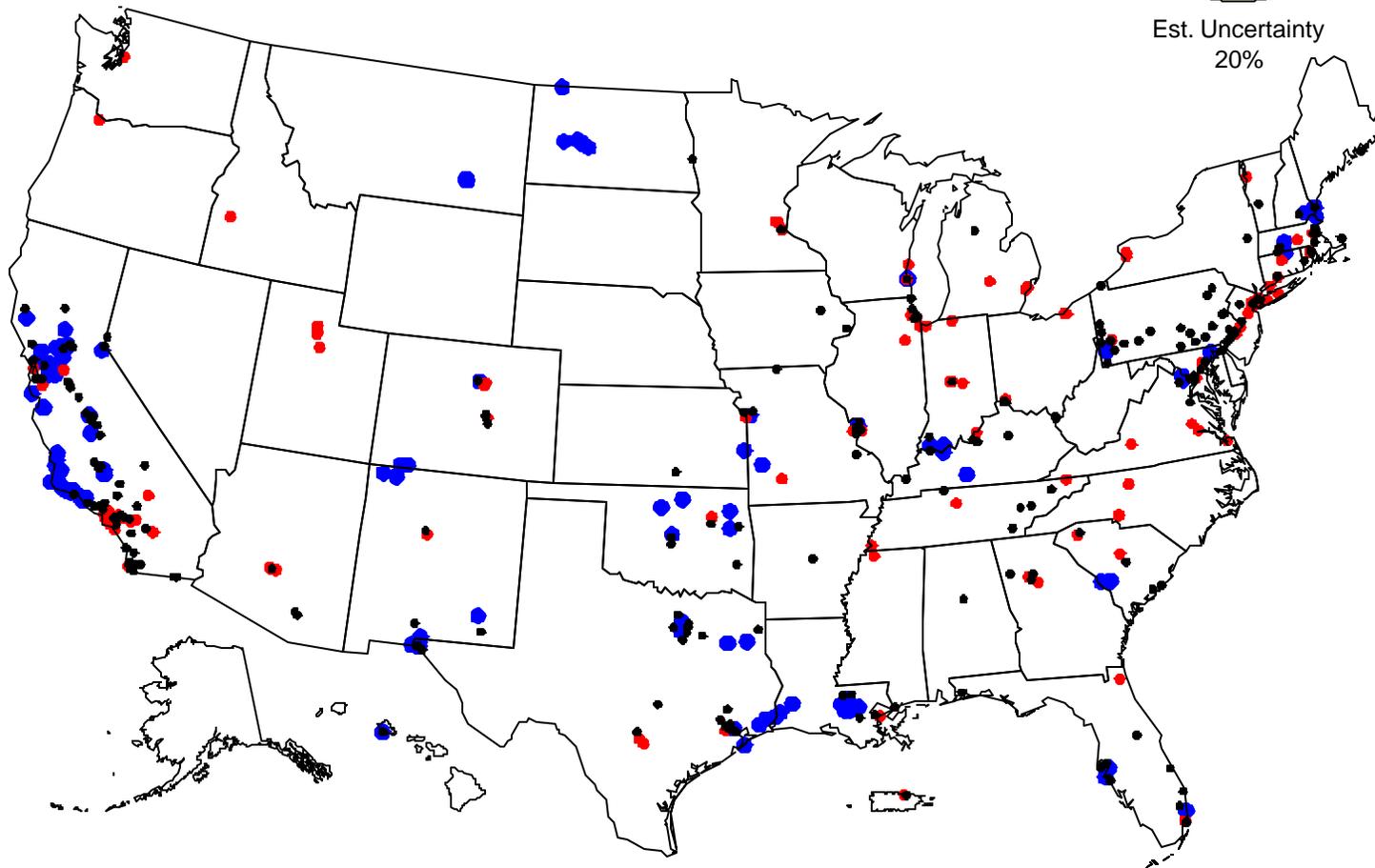
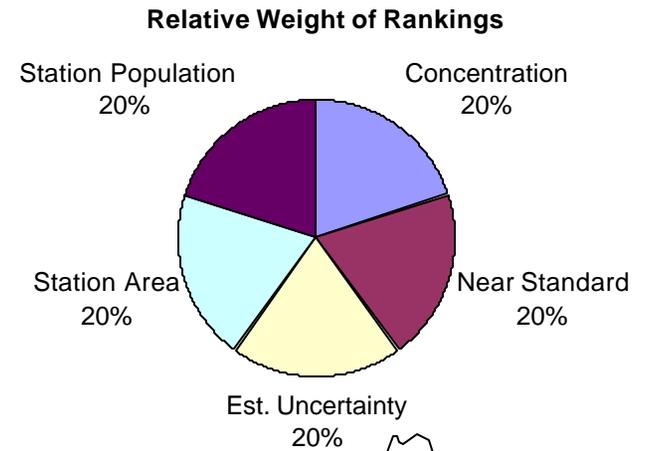
CO Aggregate Ranking Map(C): Red=High Value. Blue=Low Value

# CO Aggregate Ranking Map: Red=High Value, Blue=Low Value



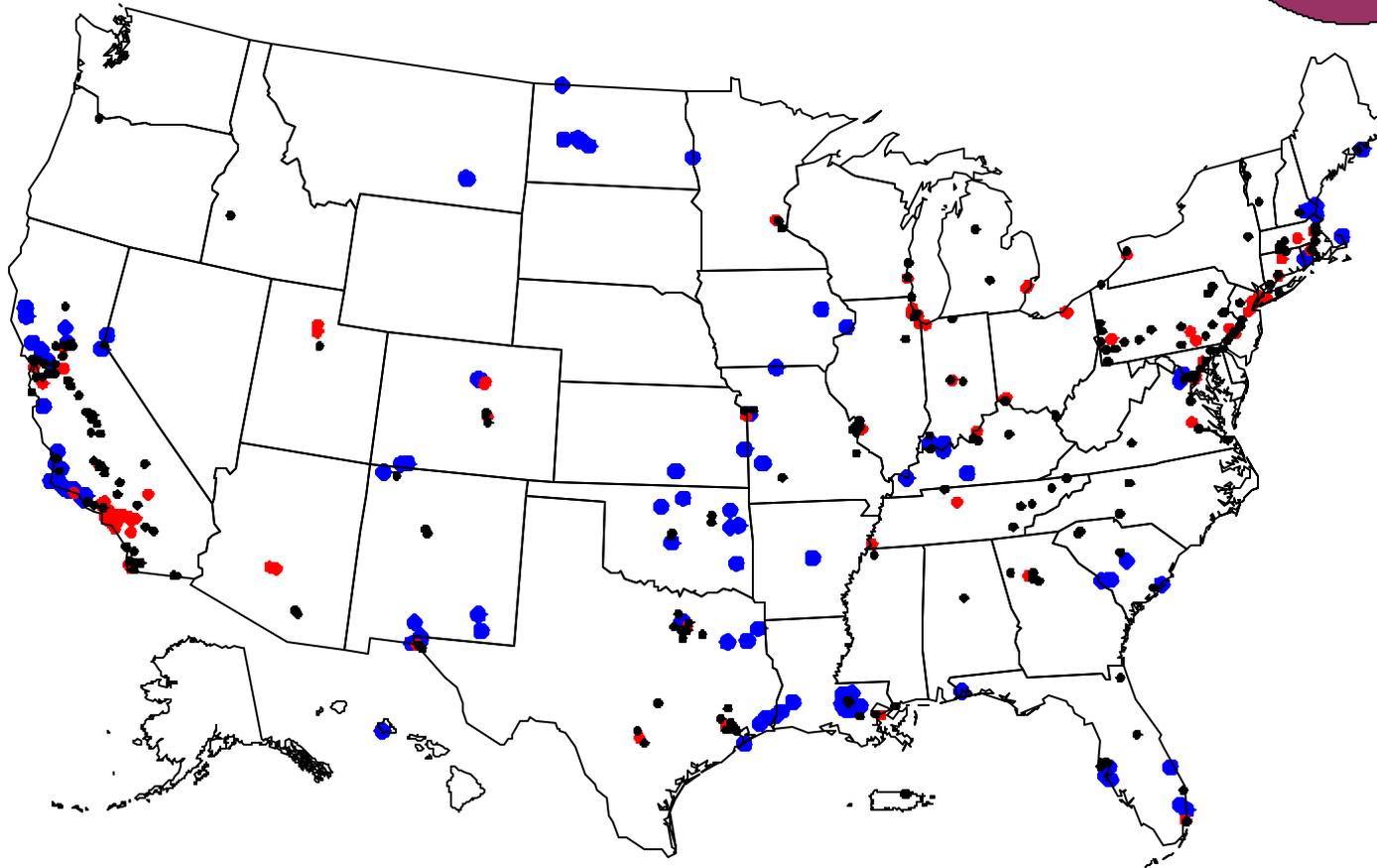
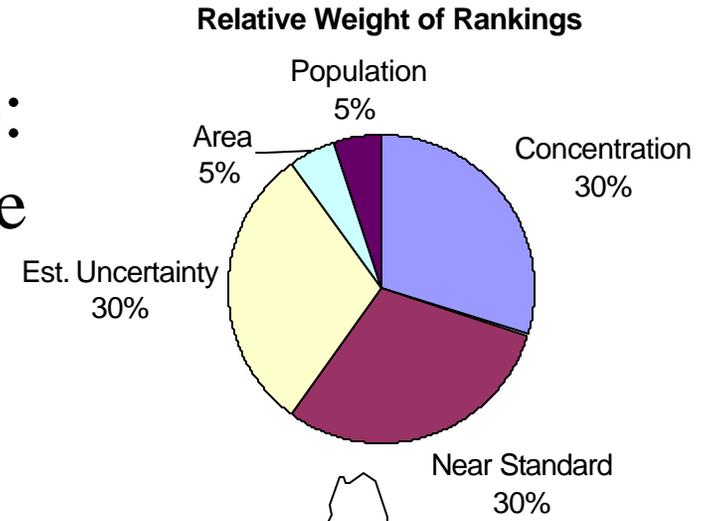
CO Aggregate Ranking Map(D): Red=High Value, Blue=Low Value

# NO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value



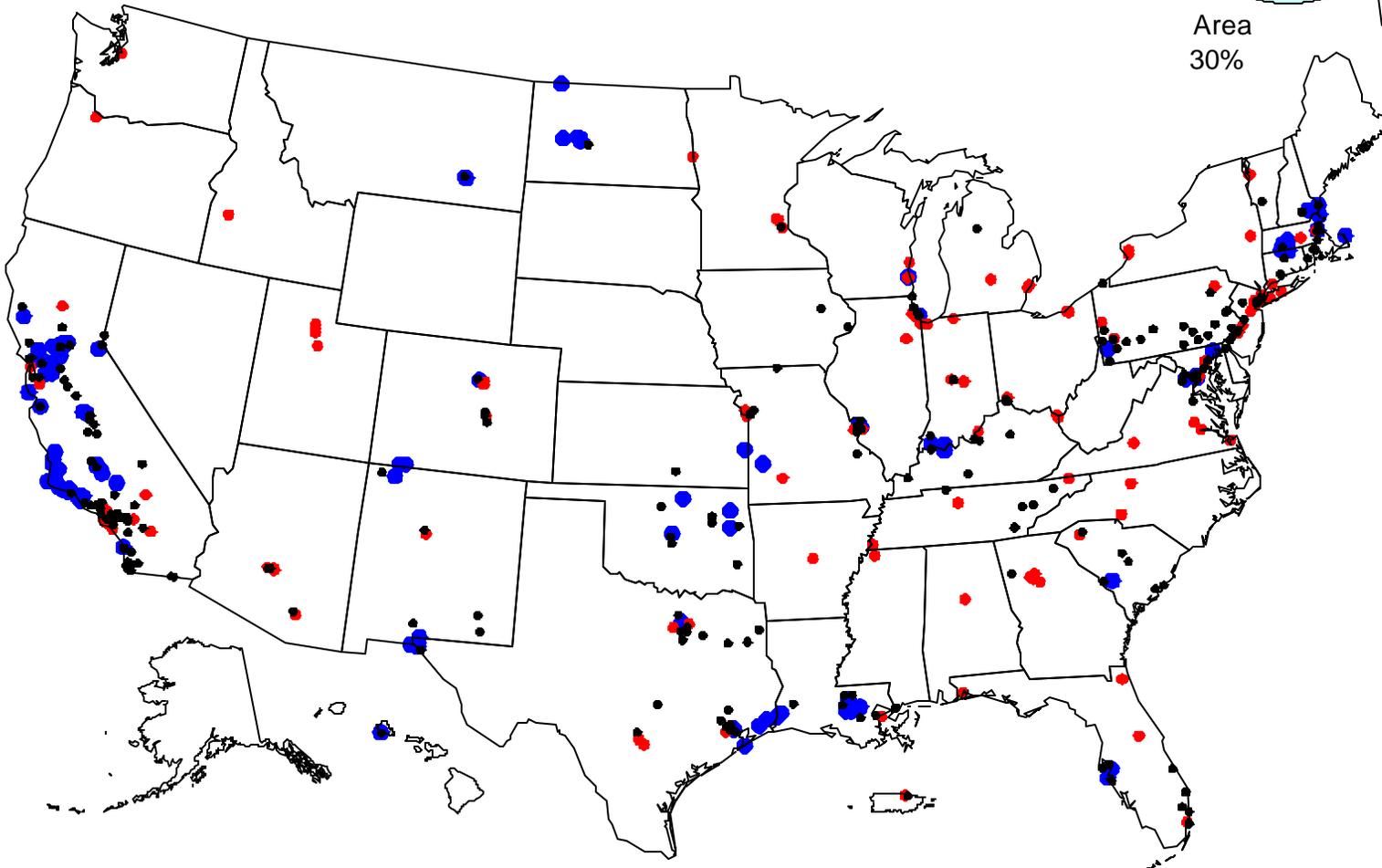
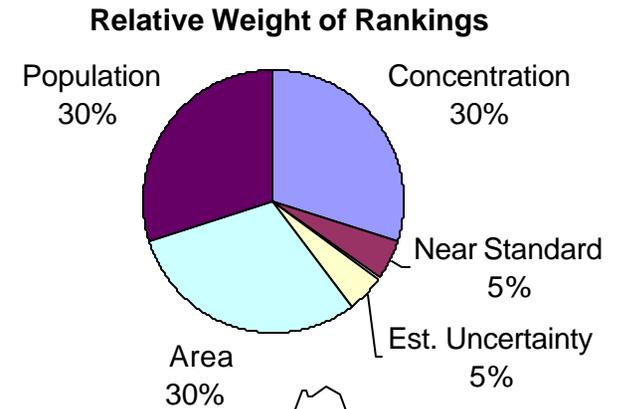
NO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value

# NO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value



NO2 Aggregate Ranking Map A: Red=High Value. Blue=Low Value

# NO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value

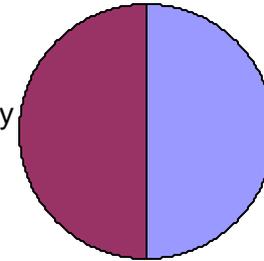


NO2 Aggregate Ranking Map B: Red=High Value, Blue=Low Value

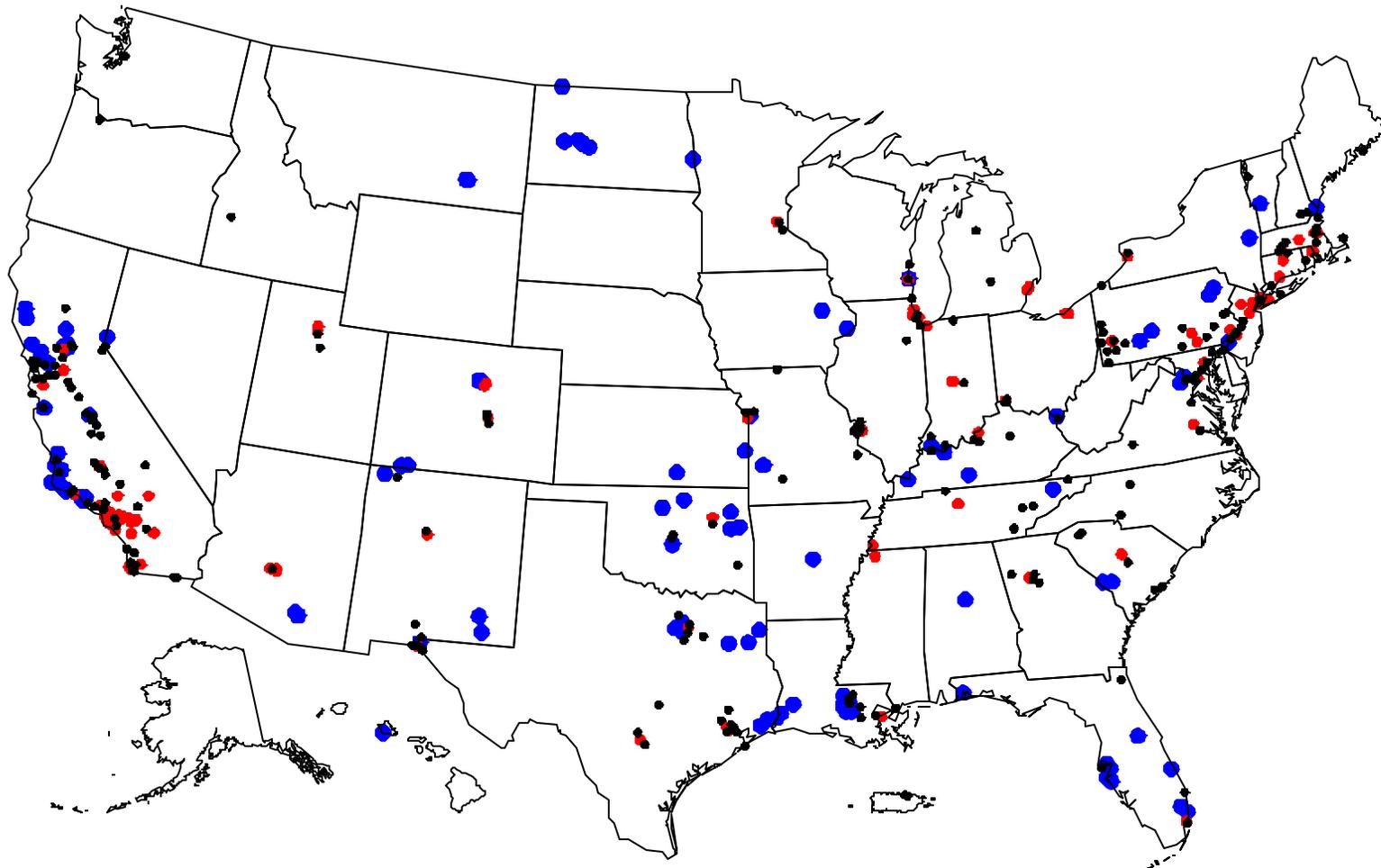
# NO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value

Relative Weight of Rankings

Est. Uncertainty  
50%

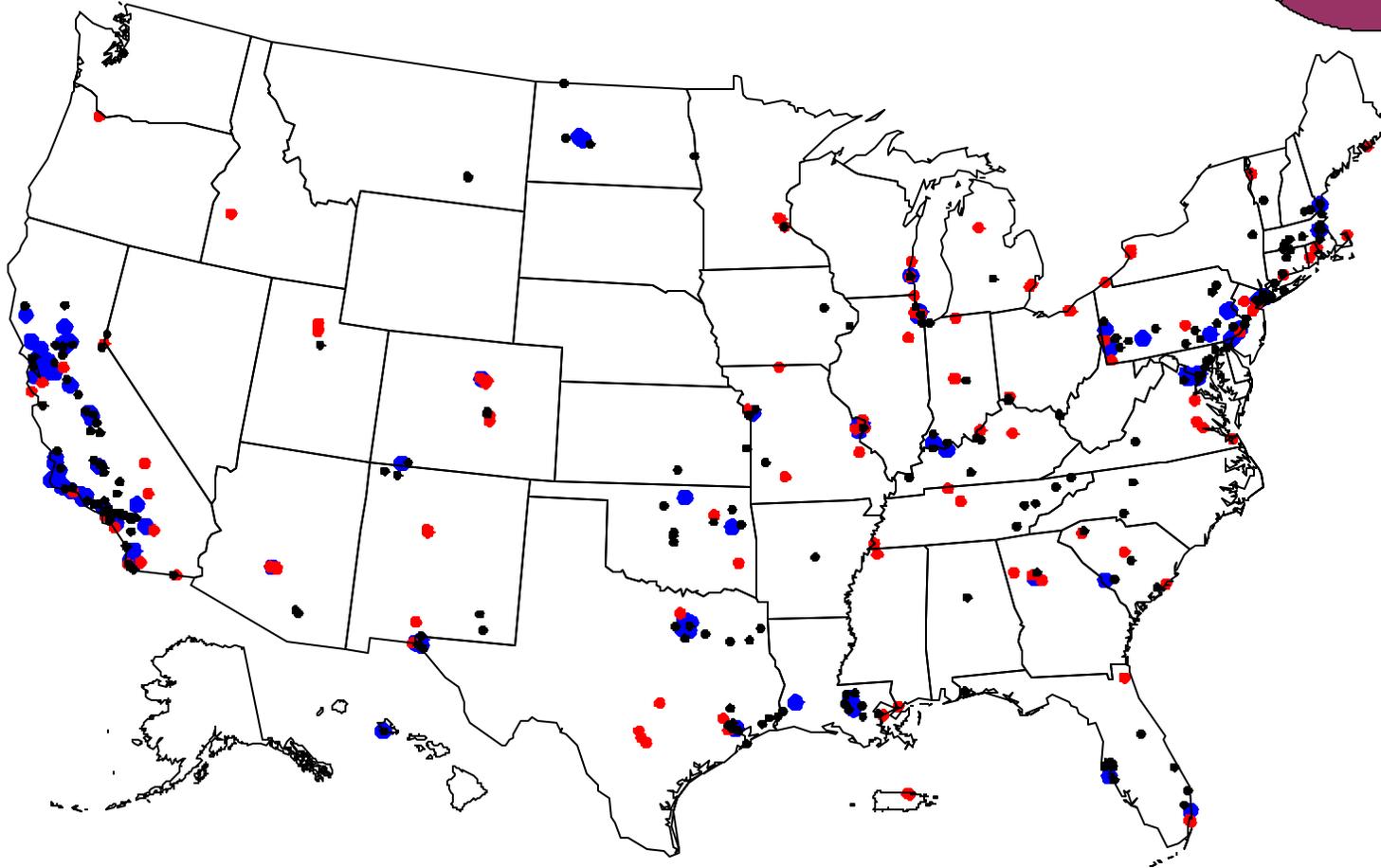
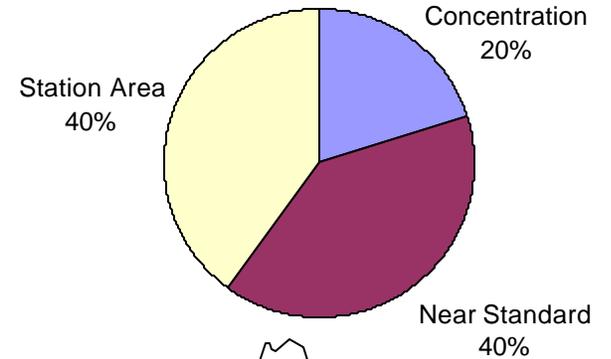


Concentration  
50%



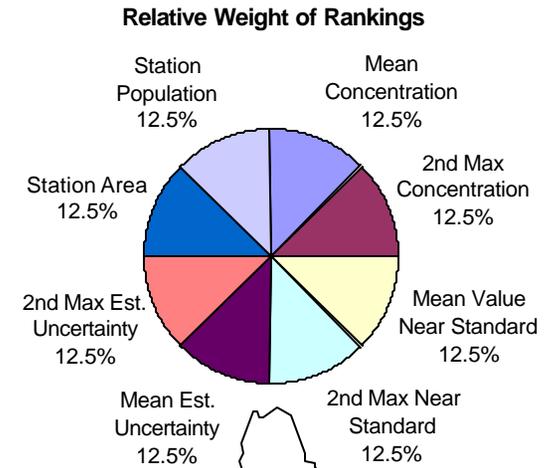
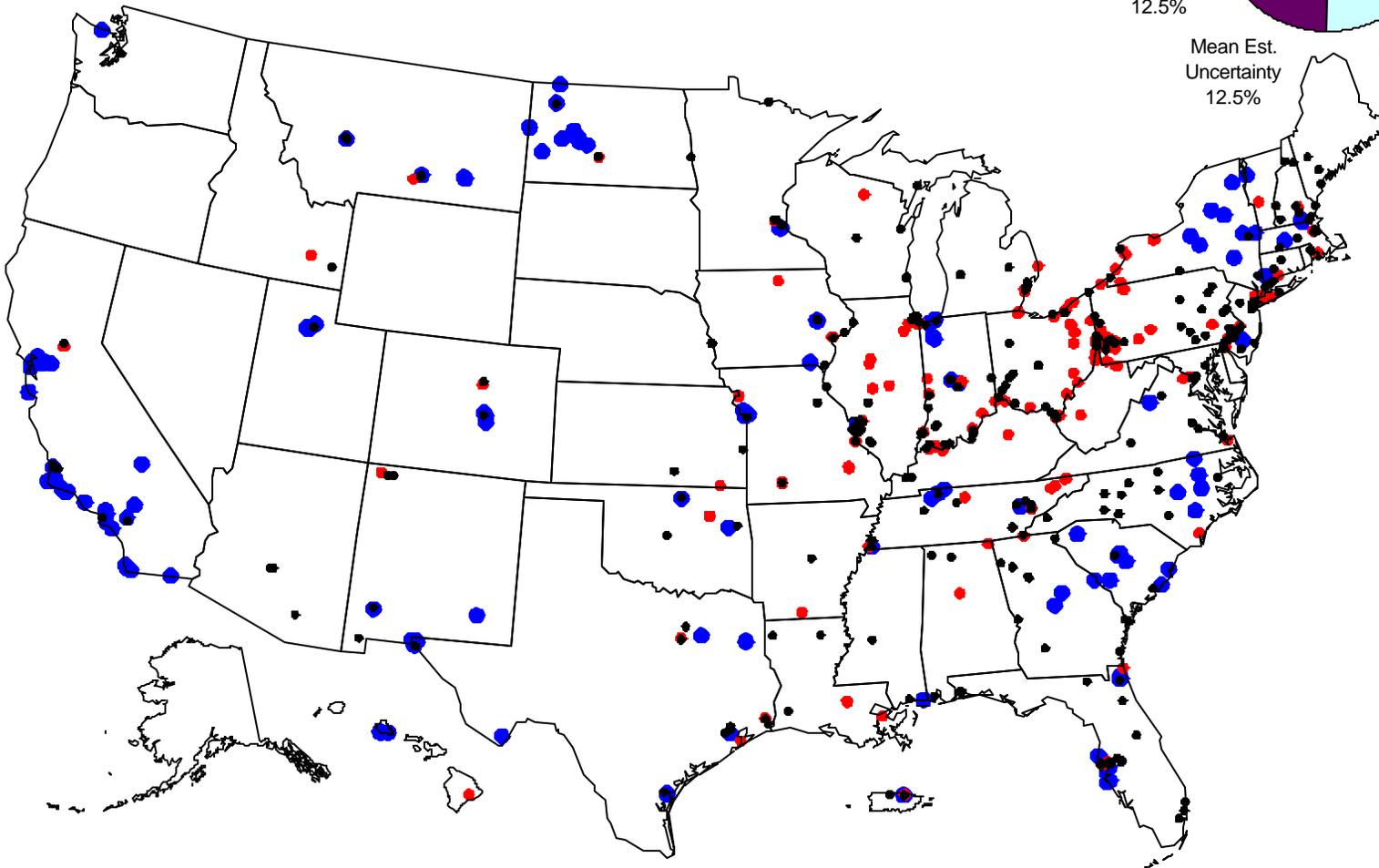
# NO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value

Relative Weight of Rankings



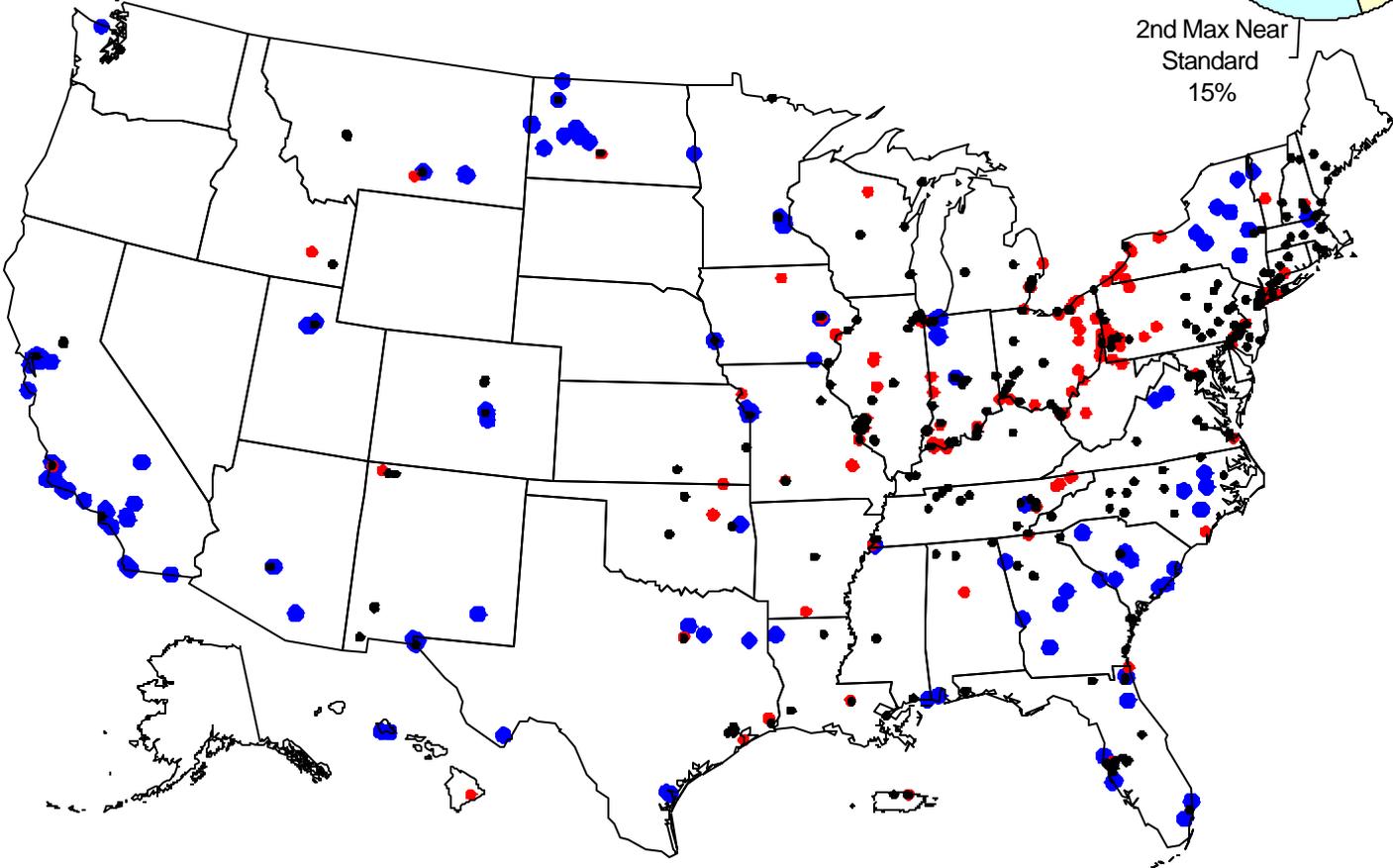
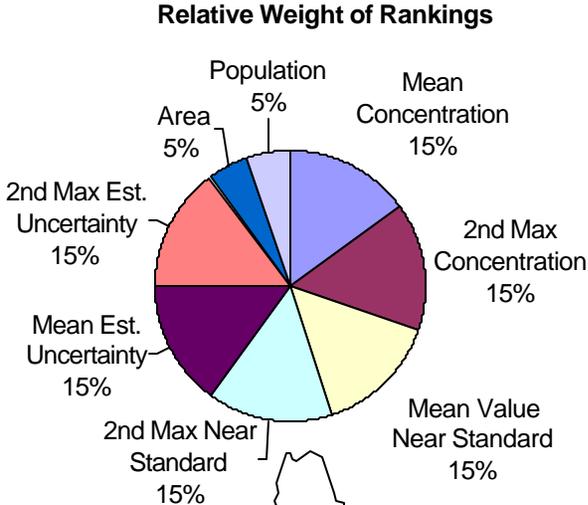
NO2 Aggregate Ranking Map D: Red=High Value, Blue=Low Value

# SO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value



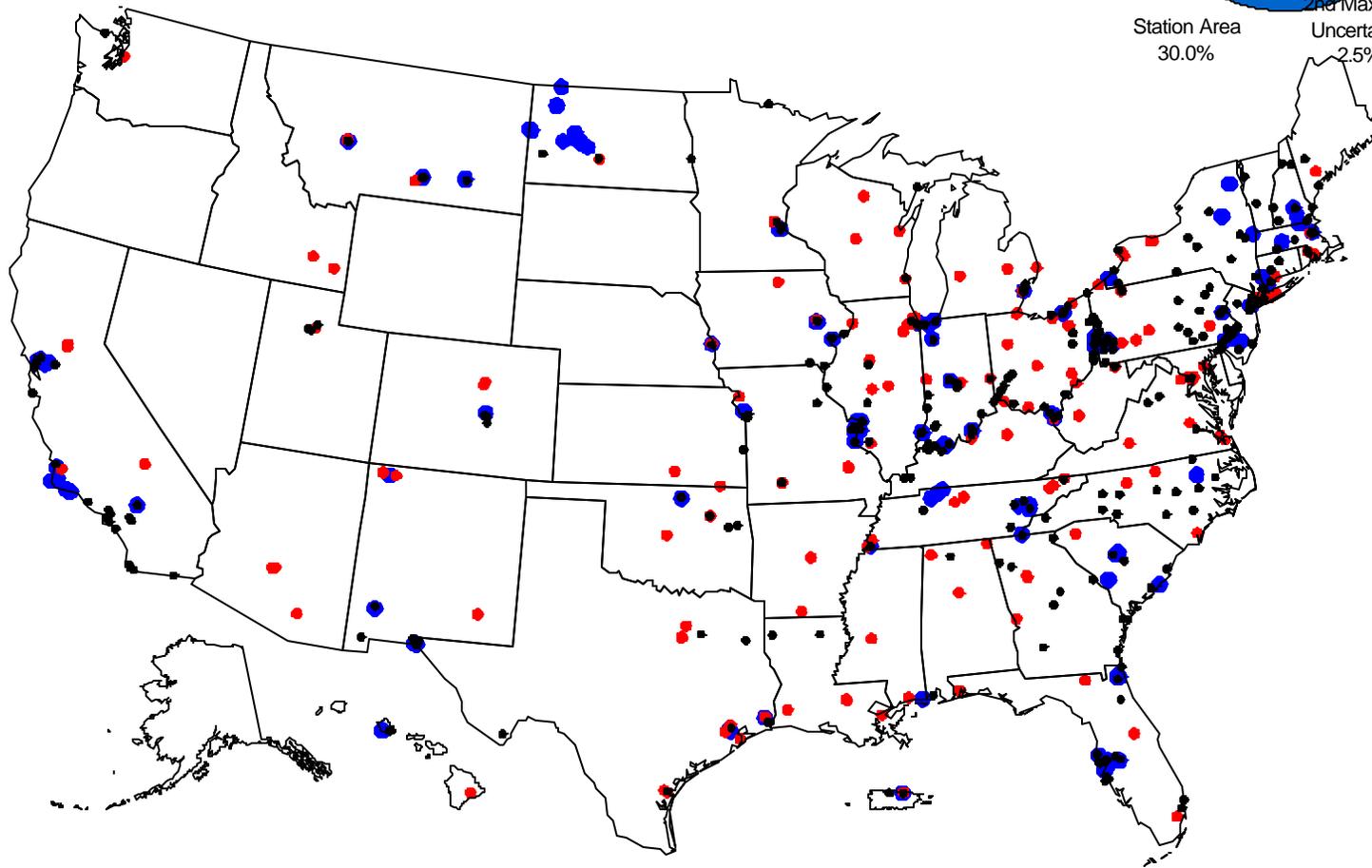
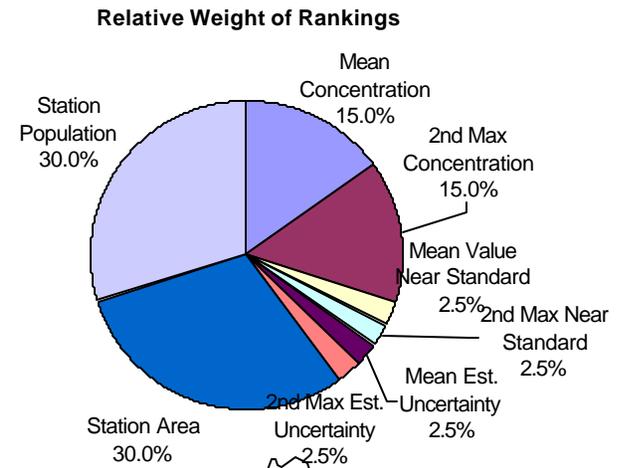
SO2 Aggregate Ranking Map: Red=High Value. Blue=Low Value

# SO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value



SO2 Aggregate Ranking Map A: Red=High Value. Blue=Low Value

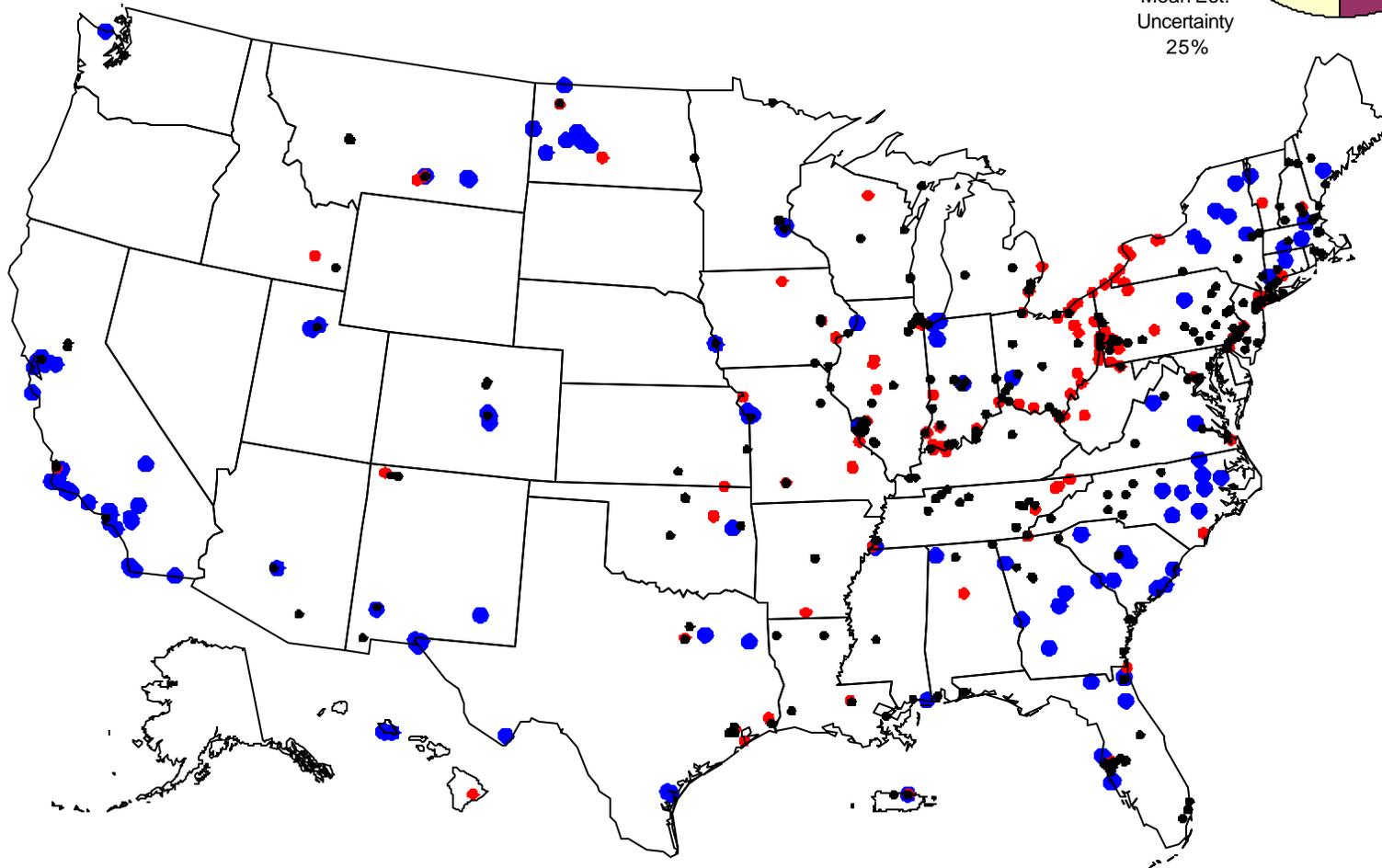
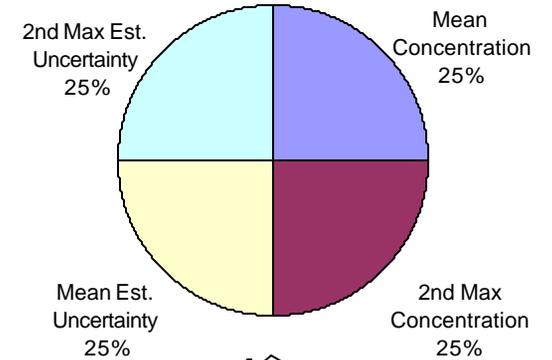
# SO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value



SO2 Aggregate Ranking Map B: Red=High Value, Blue=Low Value

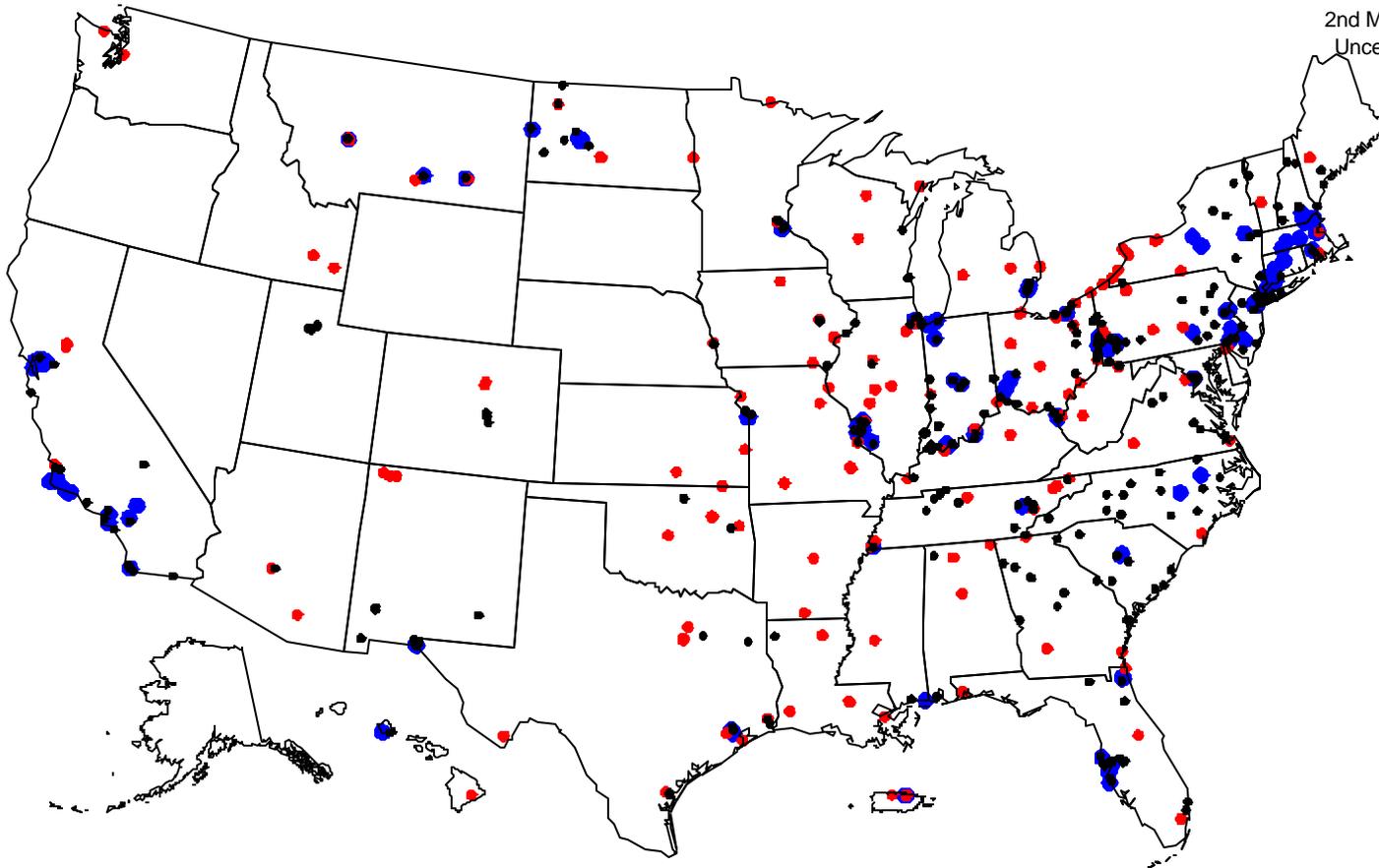
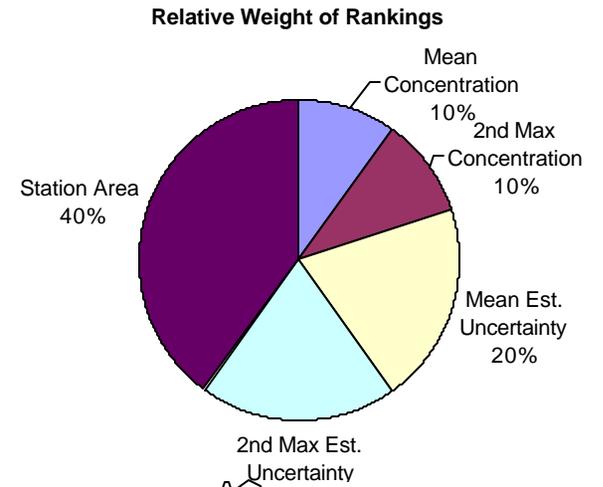
# SO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value

Relative Weight of Rankings



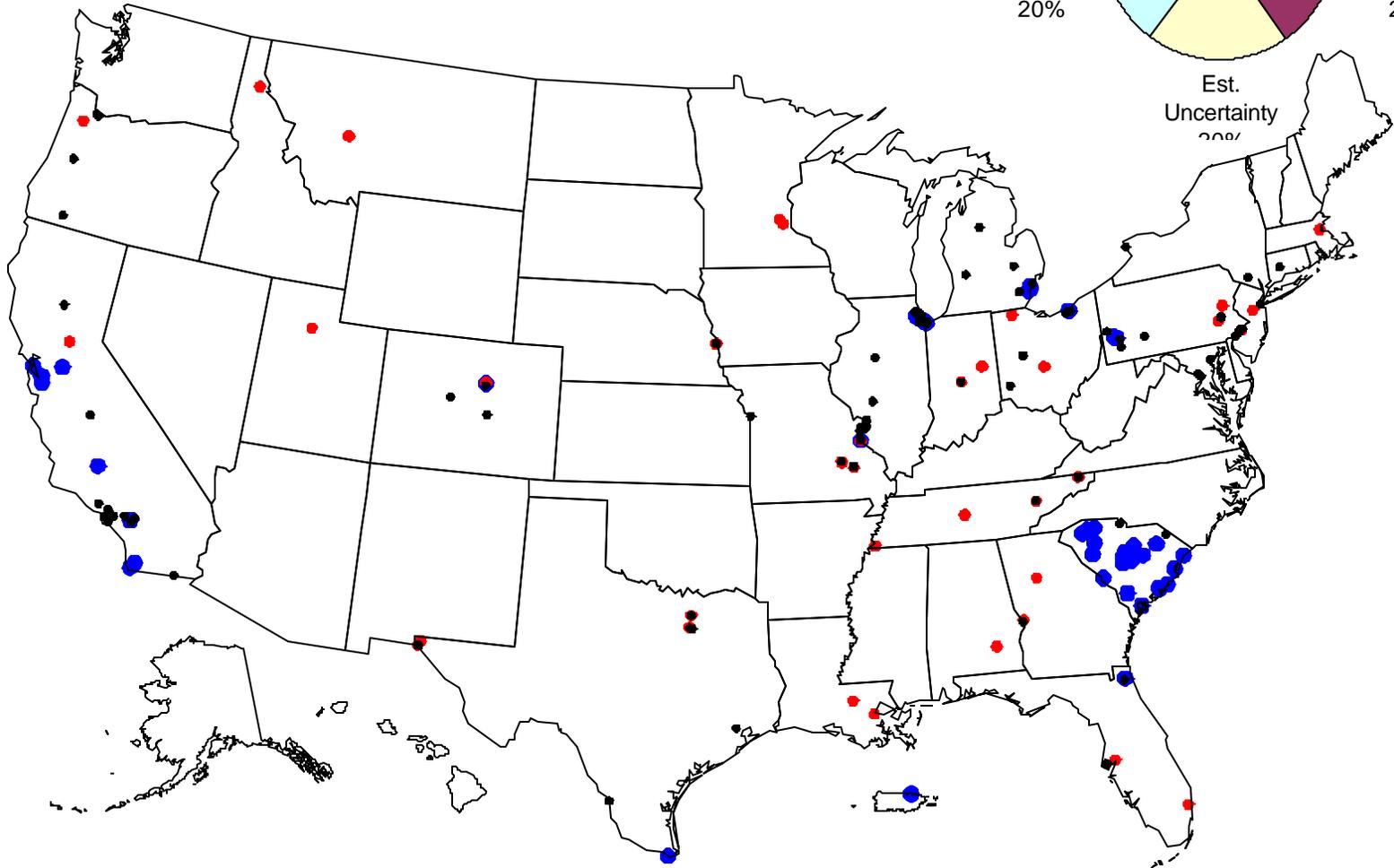
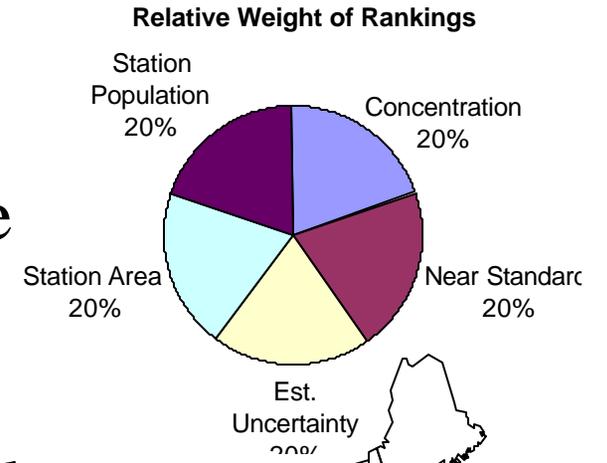
SO2 Aggregate Ranking Map C: Red=High Value, Blue=Low Value

# SO2 Aggregate Ranking Map: Red=High Value, Blue=Low Value



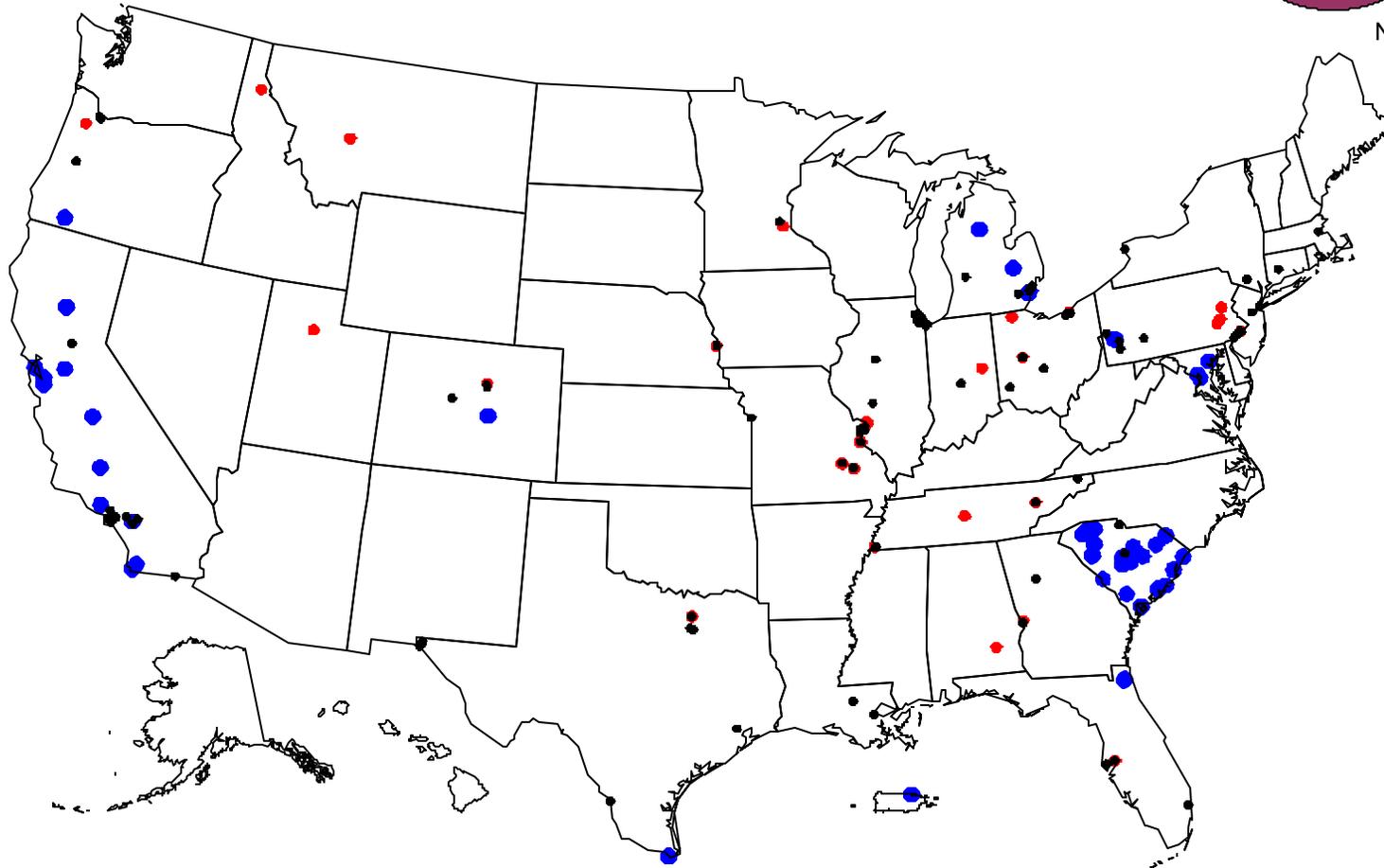
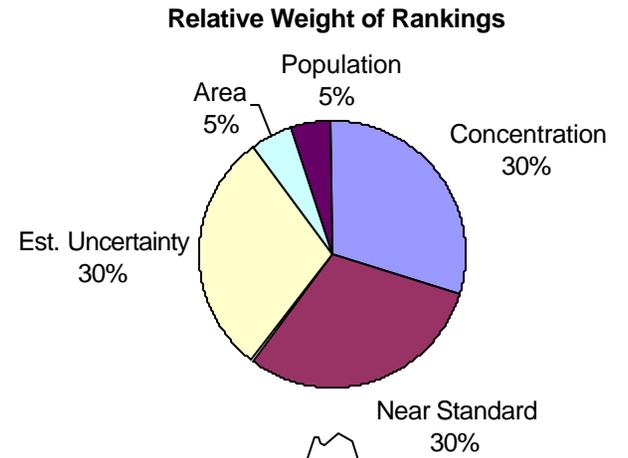
SO2 Aggregate Ranking Map D: Red=High Value. Blue=Low Value

# Pb Aggregate Ranking Map: Red=High Value, Blue=Low Value



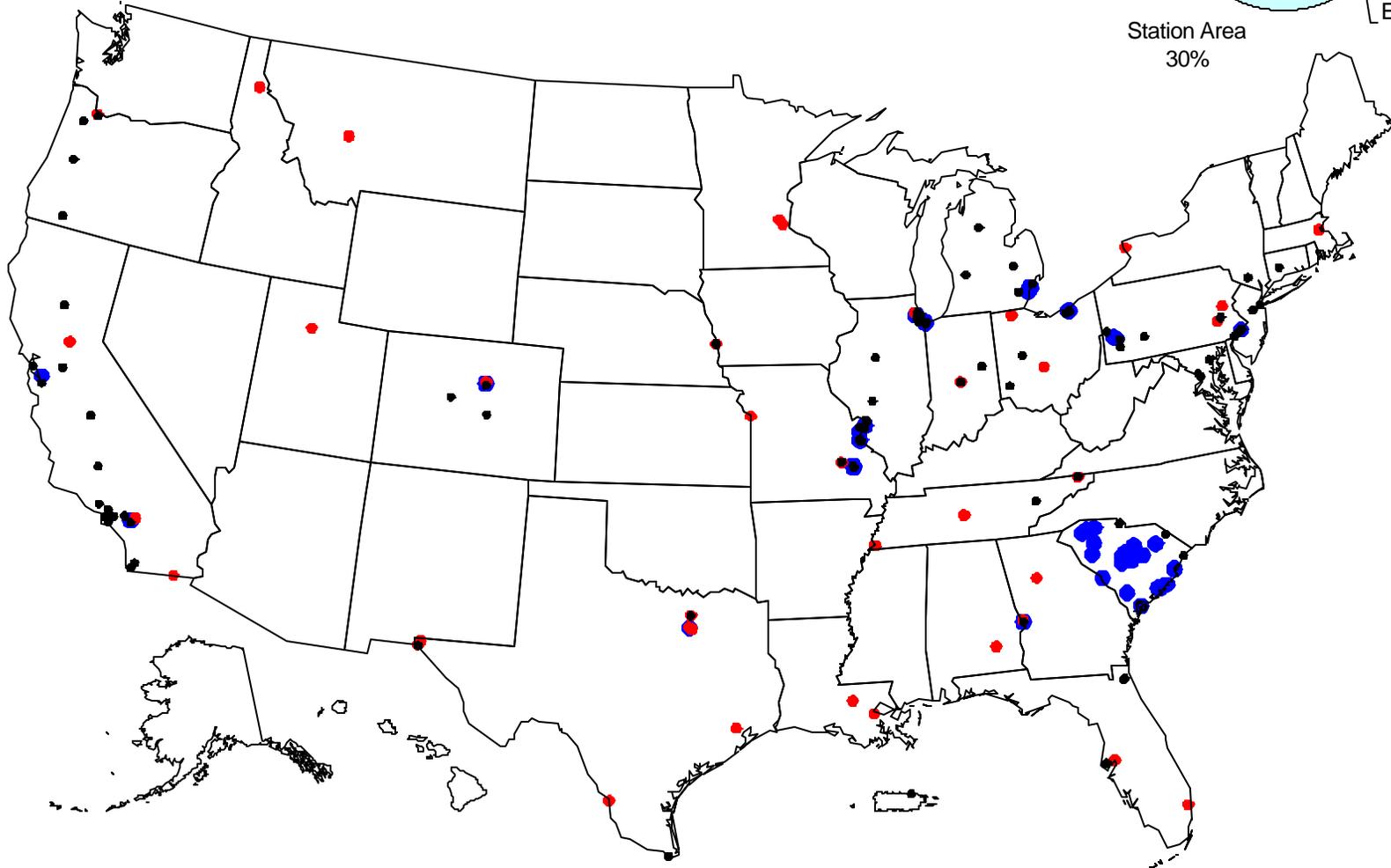
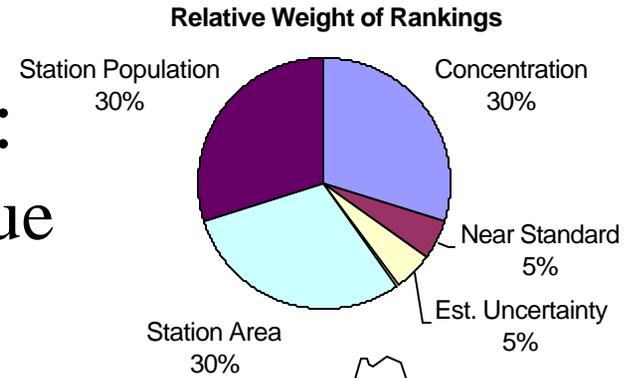
Pb Aggregate Ranking Map: Red=High Value, Blue=Low Value

# Pb Aggregate Ranking Map: Red=High Value, Blue=Low Value



Pb Aggregate Ranking Map A: Red=High Value, Blue=Low Value

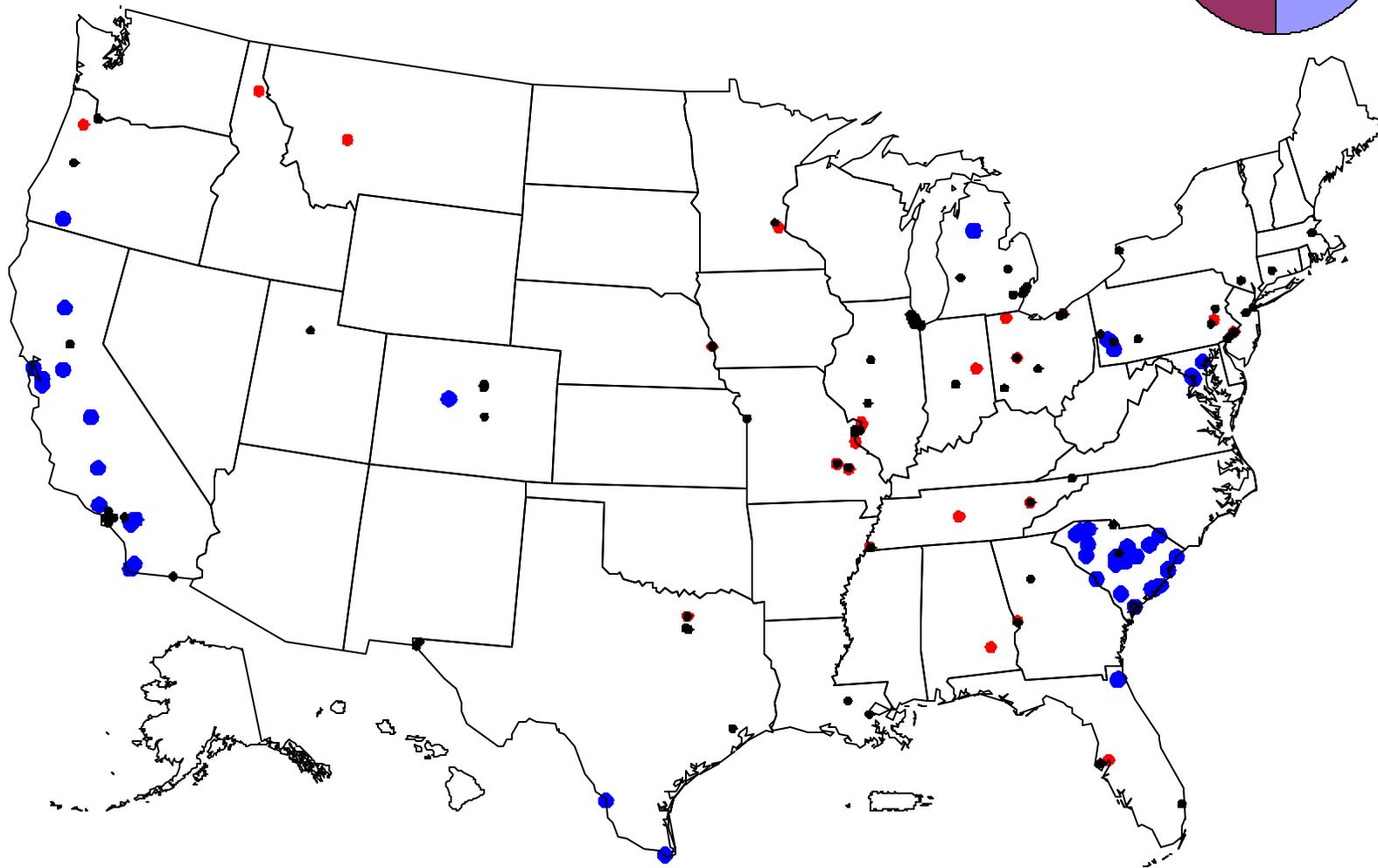
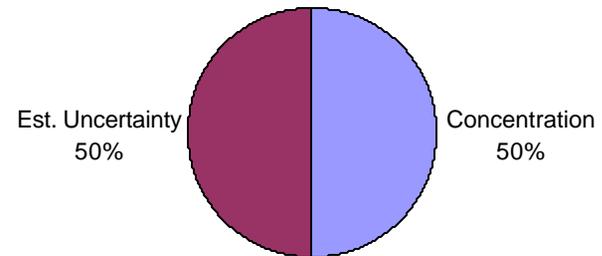
# Pb Aggregate Ranking Map: Red=High Value, Blue=Low Value



Pb Aggregate Ranking Map B: Red=High Value. Blue=Low Value

# Pb Aggregate Ranking Map: Red=High Value, Blue=Low Value

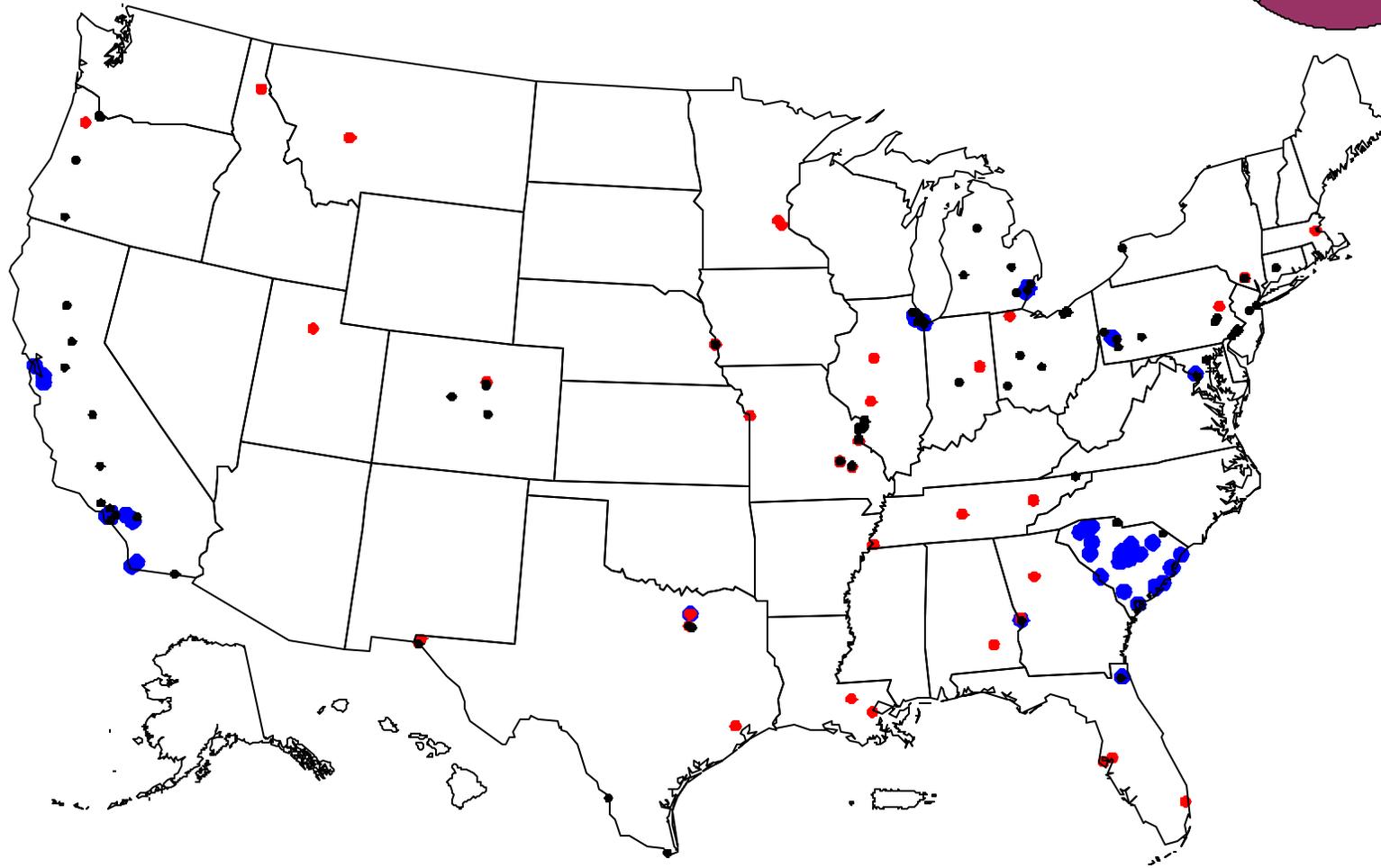
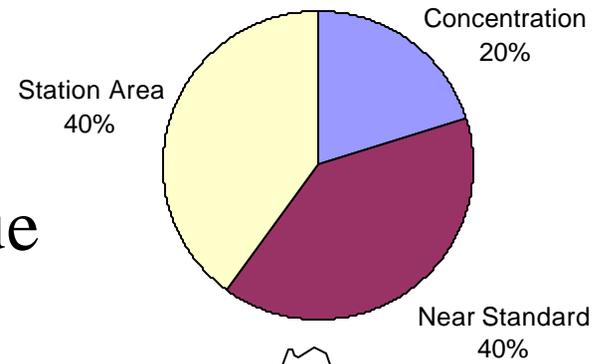
Relative Weight of Rankings



Pb Aggregate Ranking Map C: Red=High Value. Blue=Low Value

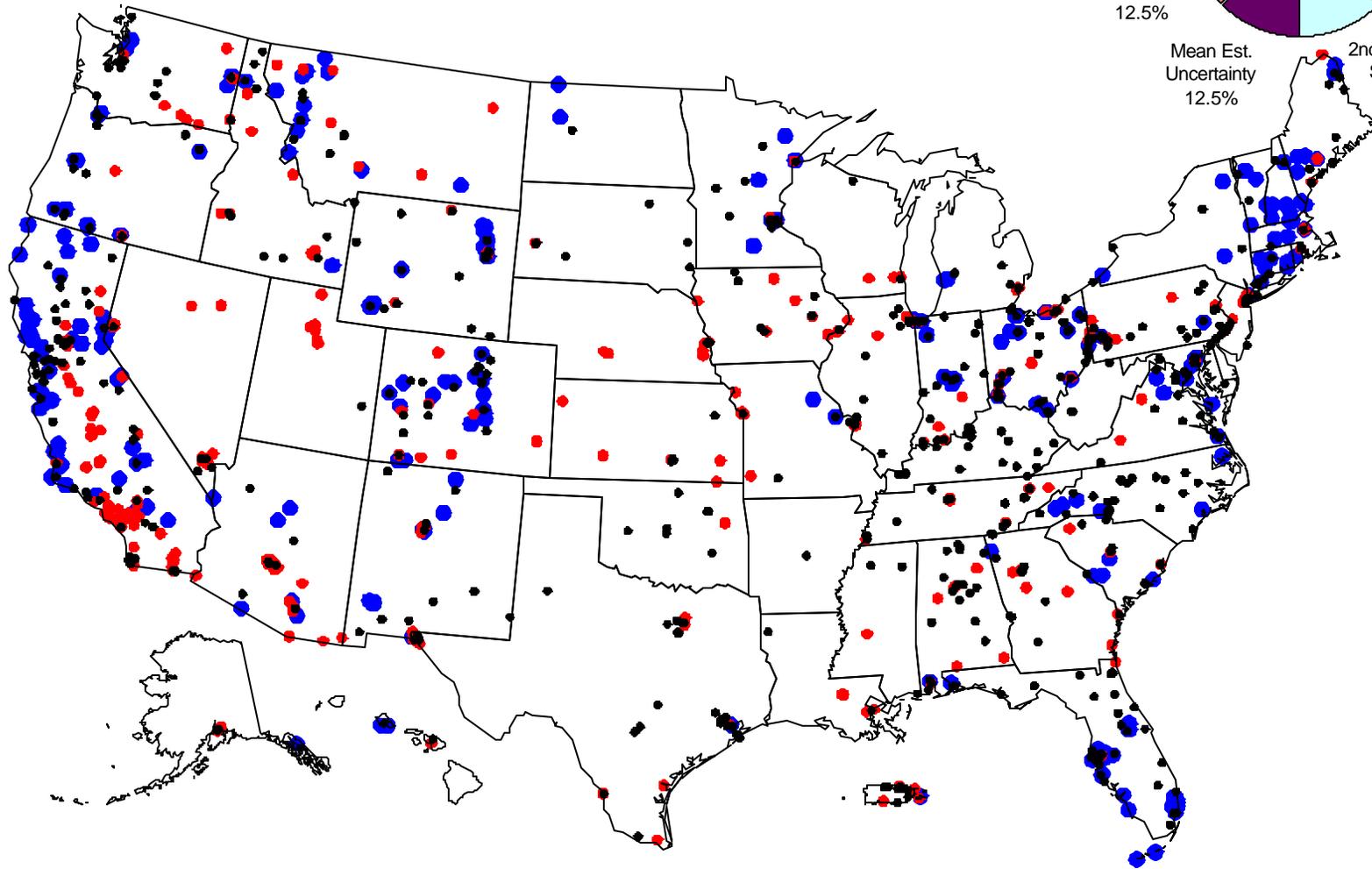
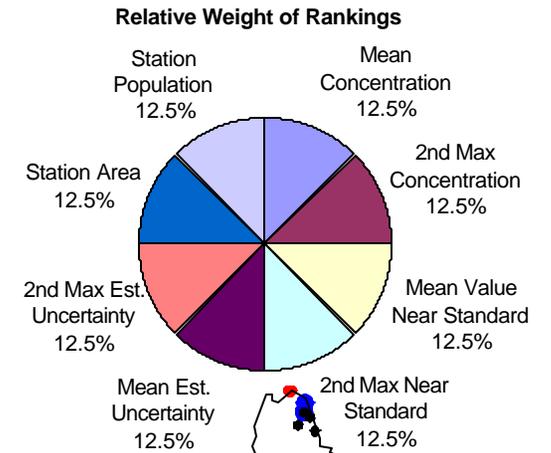
# Pb Aggregate Ranking Map: Red=High Value, Blue=Low Value

Relative Weight of Rankings



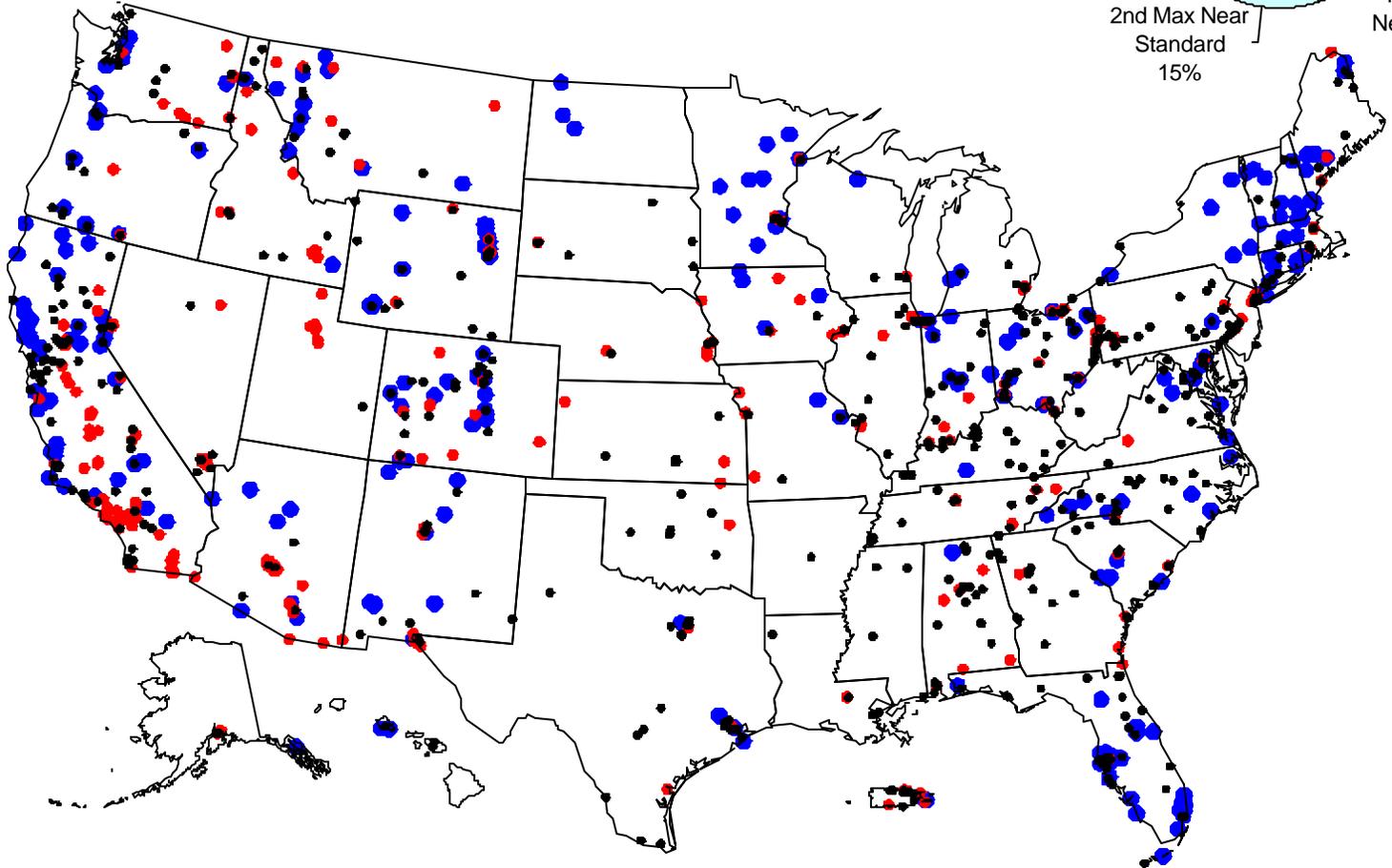
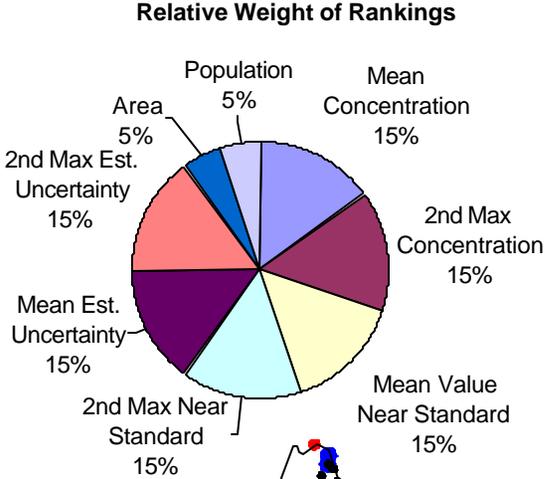
Pb Aggregate Ranking Map D: Red=High Value, Blue=Low Value

# PM10 Aggregate Ranking Map: Red=High Value, Blue=Low Value



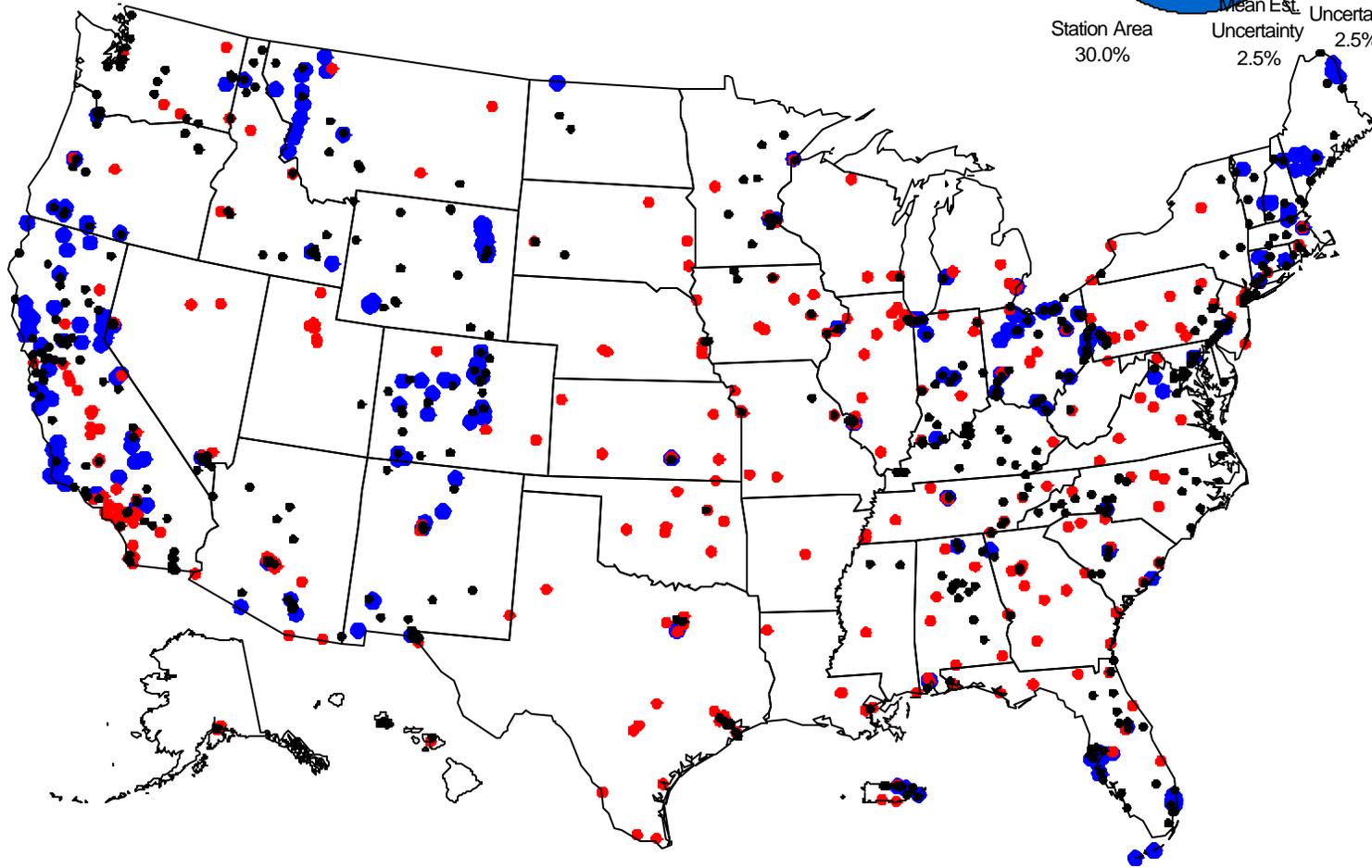
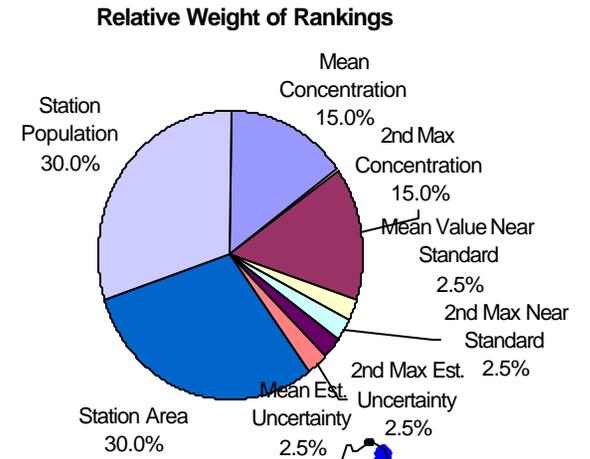
PM10 Aggregate Ranking Map: Red=High Value. Blue=Low Value

# PM10 Aggregate Ranking Map: Red=High Value, Blue=Low Value



PM10 Aggregate Ranking Map A: Red=High Value, Blue=Low Value

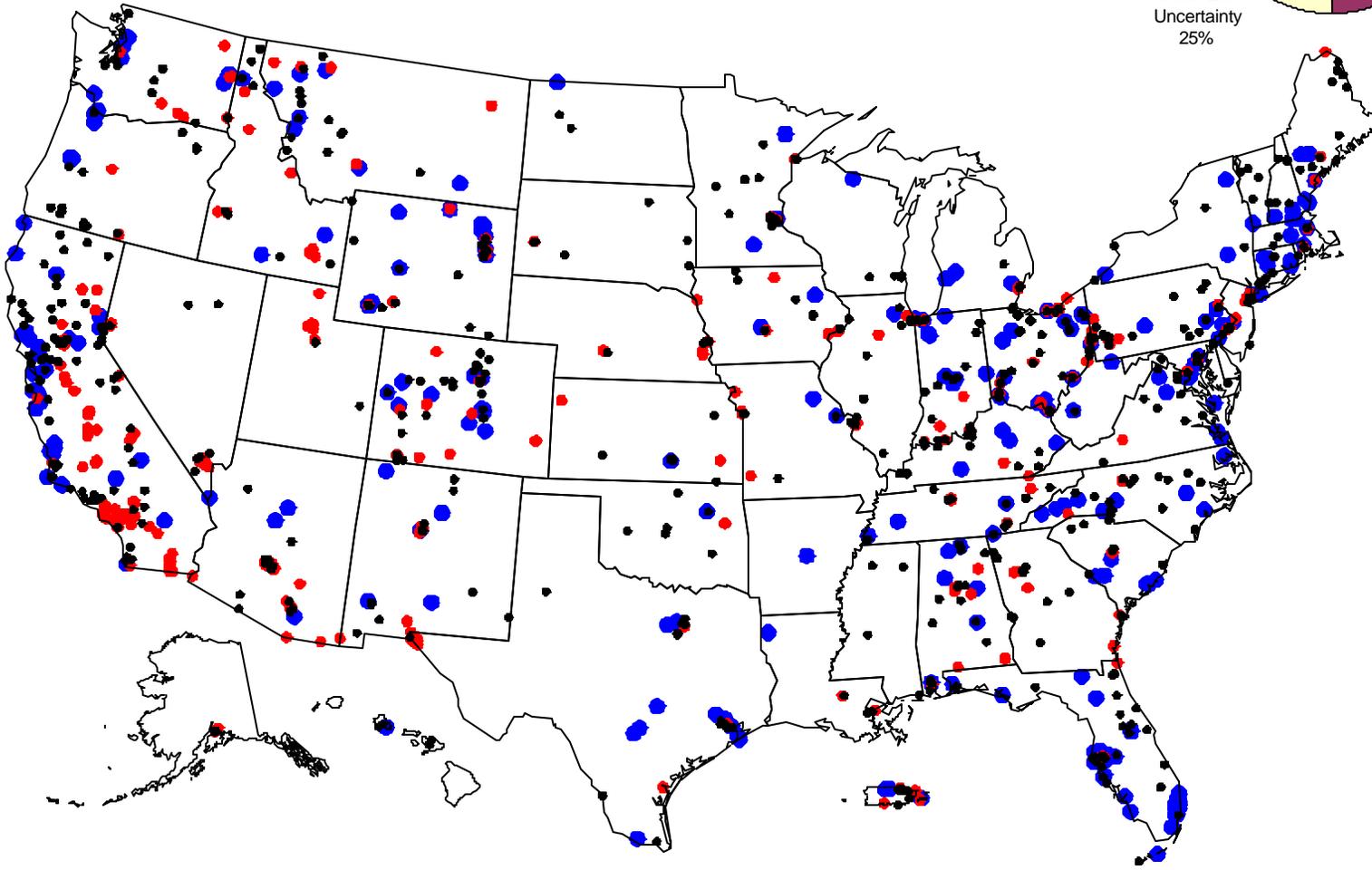
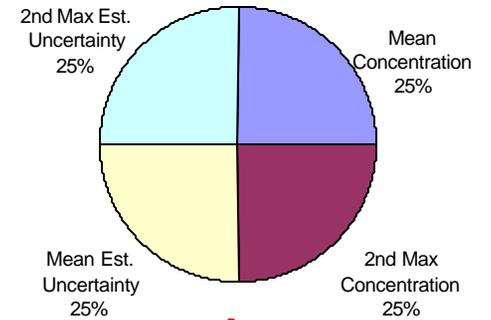
# PM10 Aggregate Ranking Map: Red=High Value, Blue=Low Value



PM10 Aggregate Ranking Map B: Red=High Value. Blue=Low Value

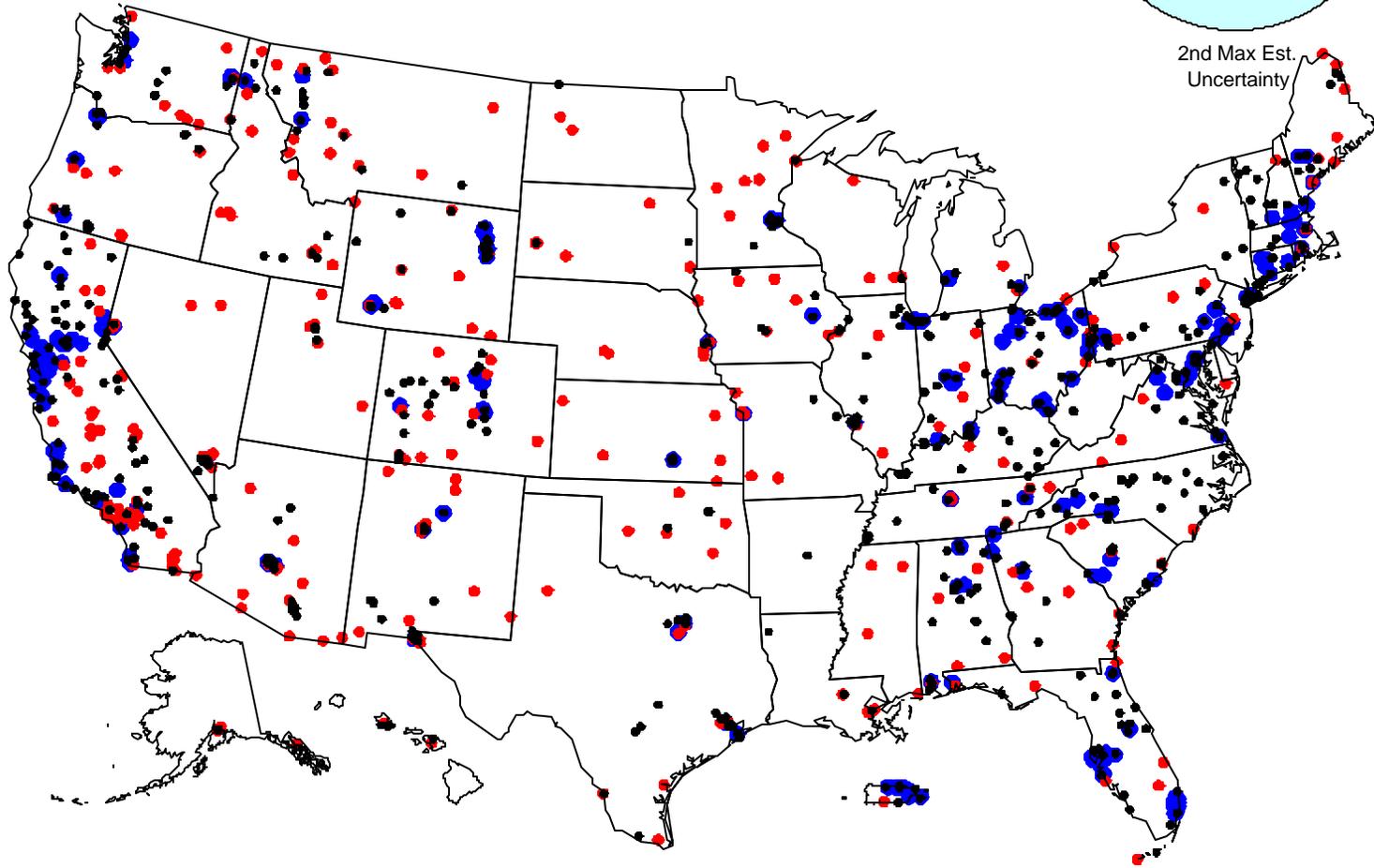
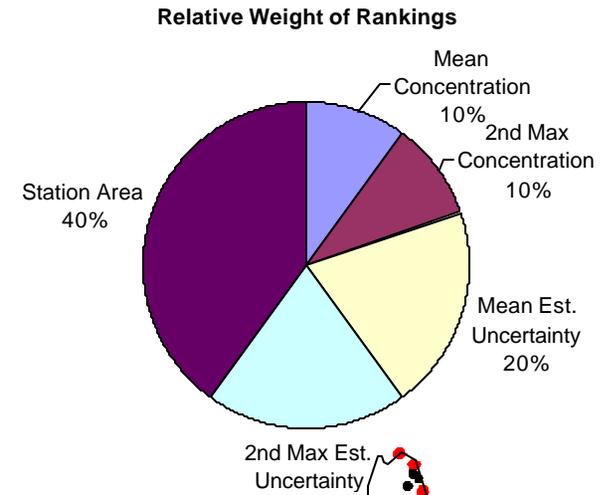
# PM10 Aggregate Ranking Map: Red=High Value, Blue=Low Value

Relative Weight of Rankings



PM10 Aggregate Ranking Map C: Red=High Value, Blue=Low Value

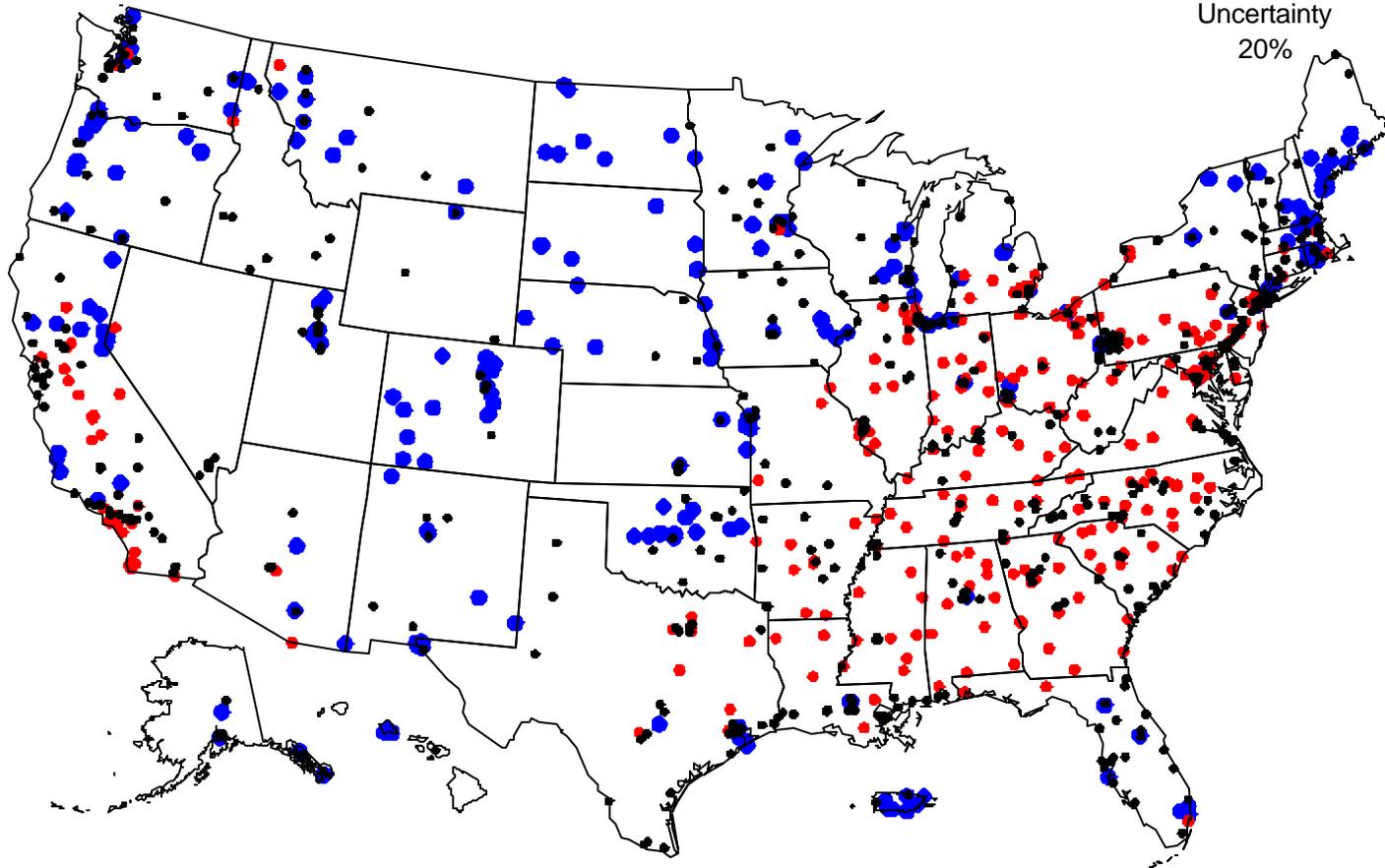
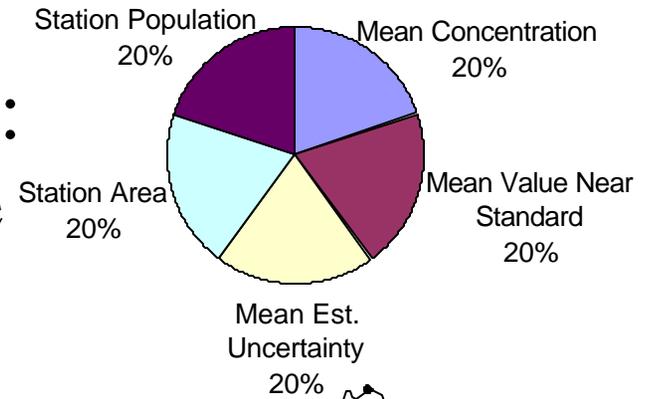
# PM10 Aggregate Ranking Map: Red=High Value, Blue=Low Value



PM10 Aggregate Ranking Map D: Red=High Value, Blue=Low Value

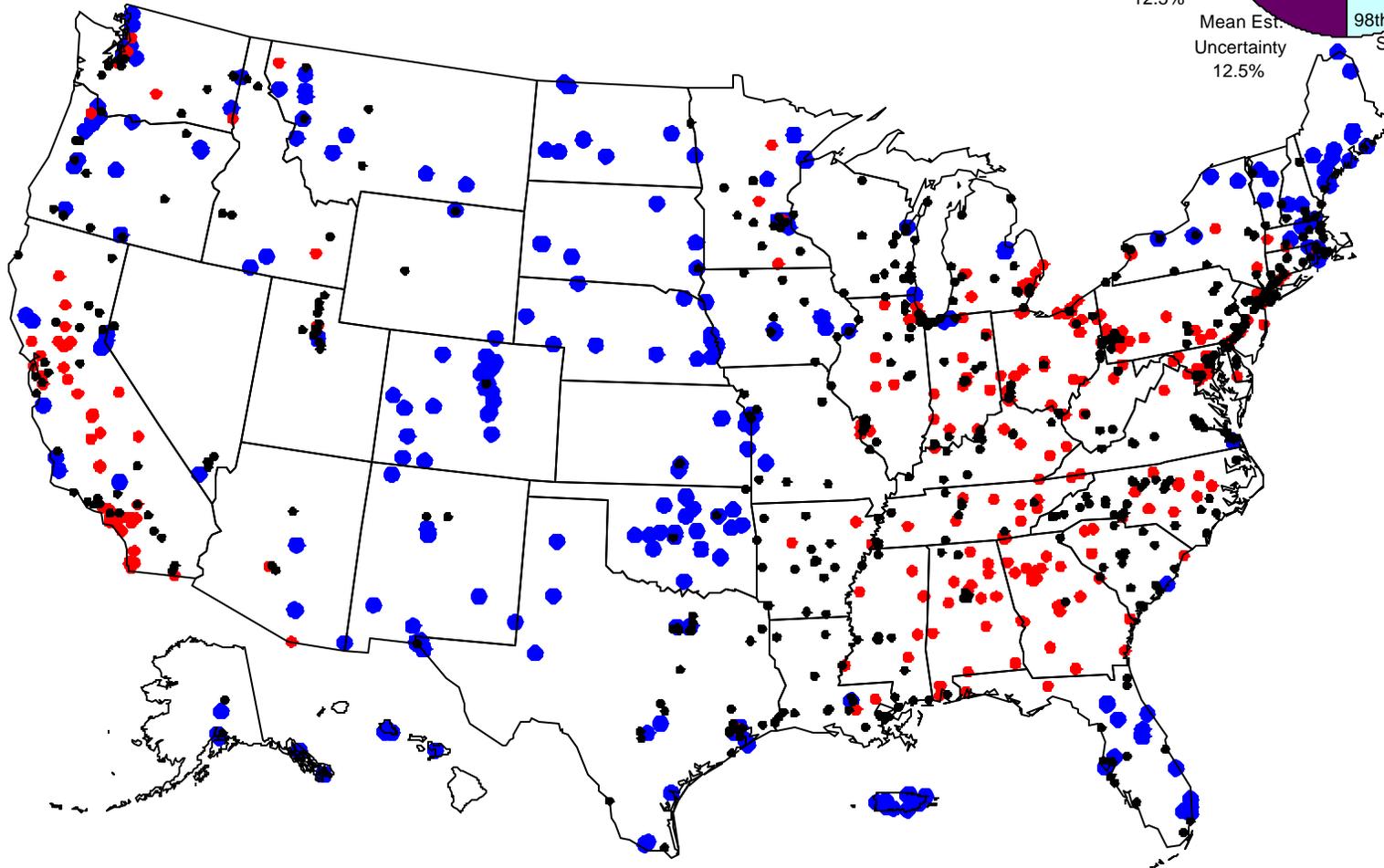
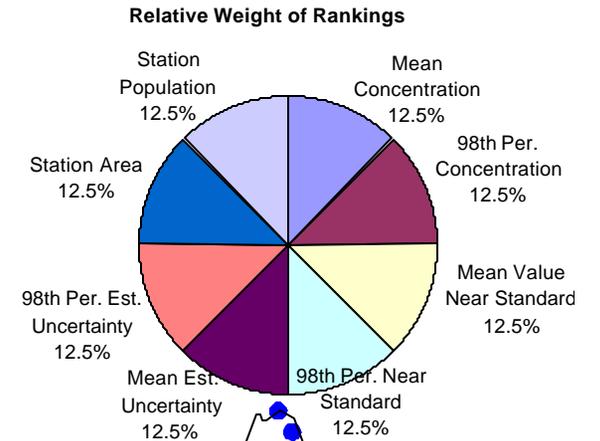
# PM25 Aggregate Ranking Map: Red=High Value, Blue=Low Value

## Relative Weight of Rankings



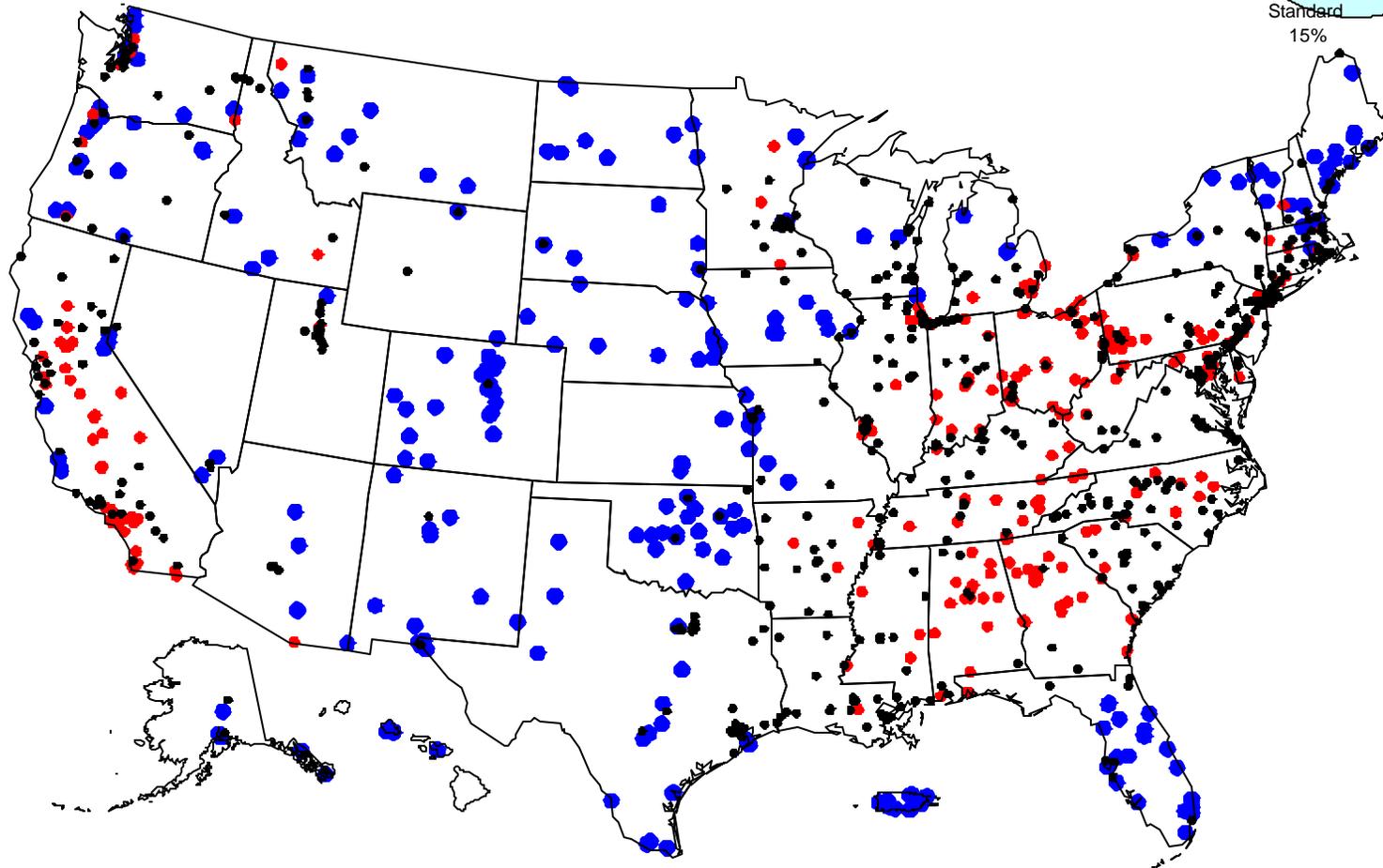
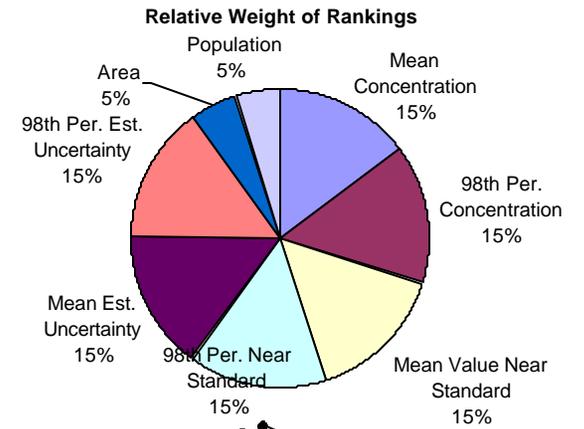
PM25 Aggregate Ranking Map: Red=High Value, Blue=Low Value

# PM25 Aggregate Ranking Map: Red=High Value, Blue=Low Value



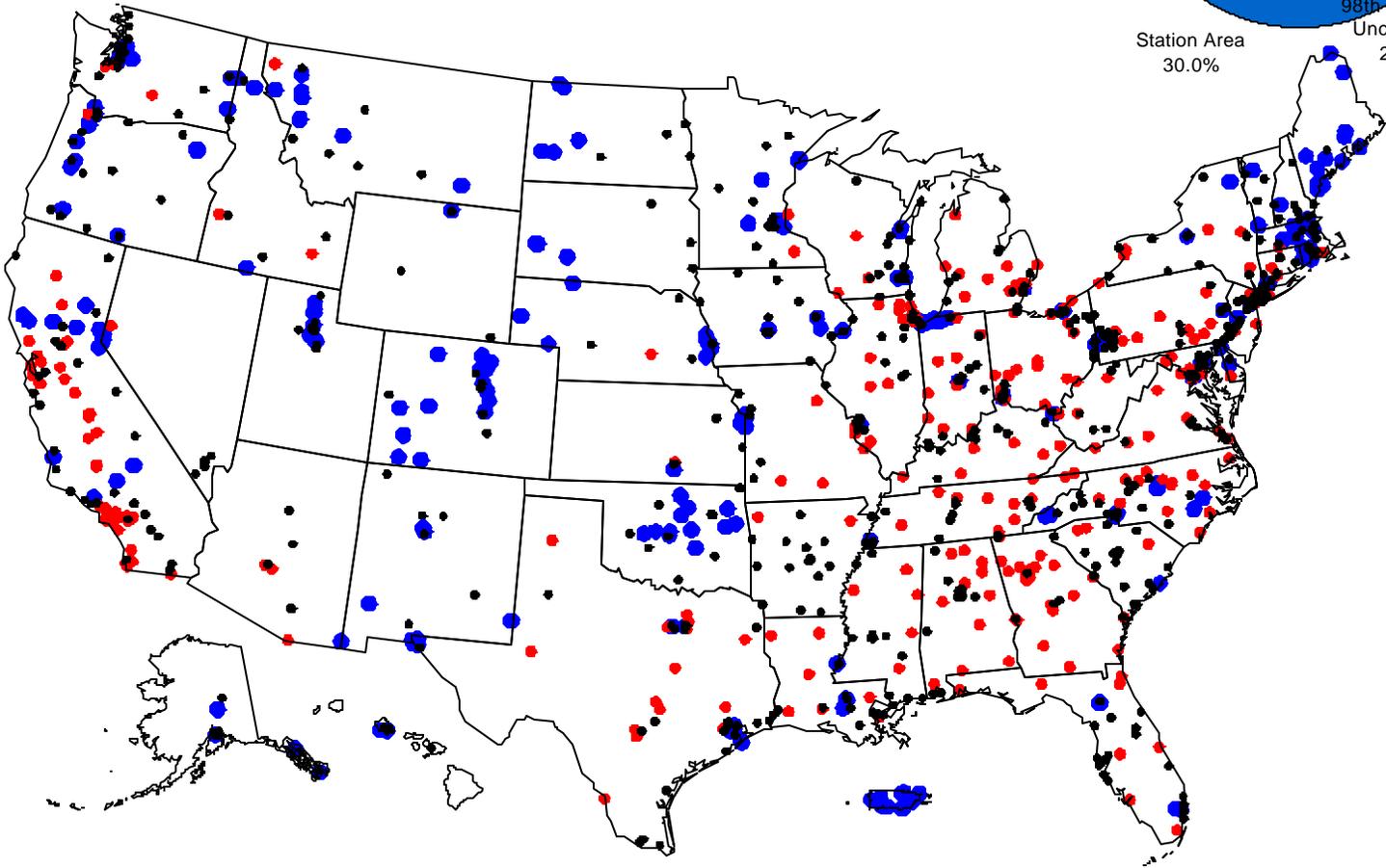
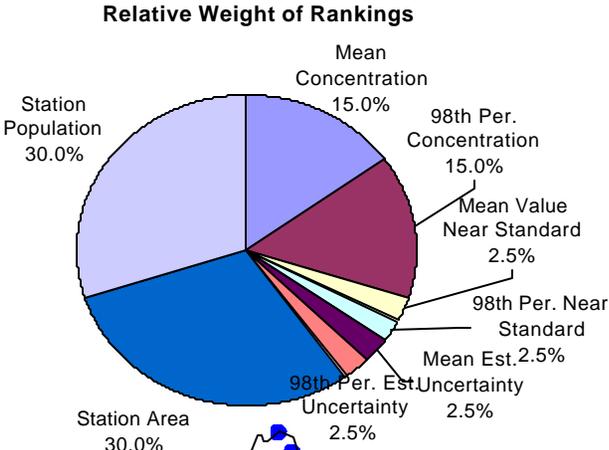
PM25 Aggregate Ranking Map: Red=High Value. Blue=Low Value

# PM25 Aggregate Ranking Map: Red=High Value, Blue=Low Value



PM25 Aggregate Ranking Map A: Red=High Value, Blue=Low Value

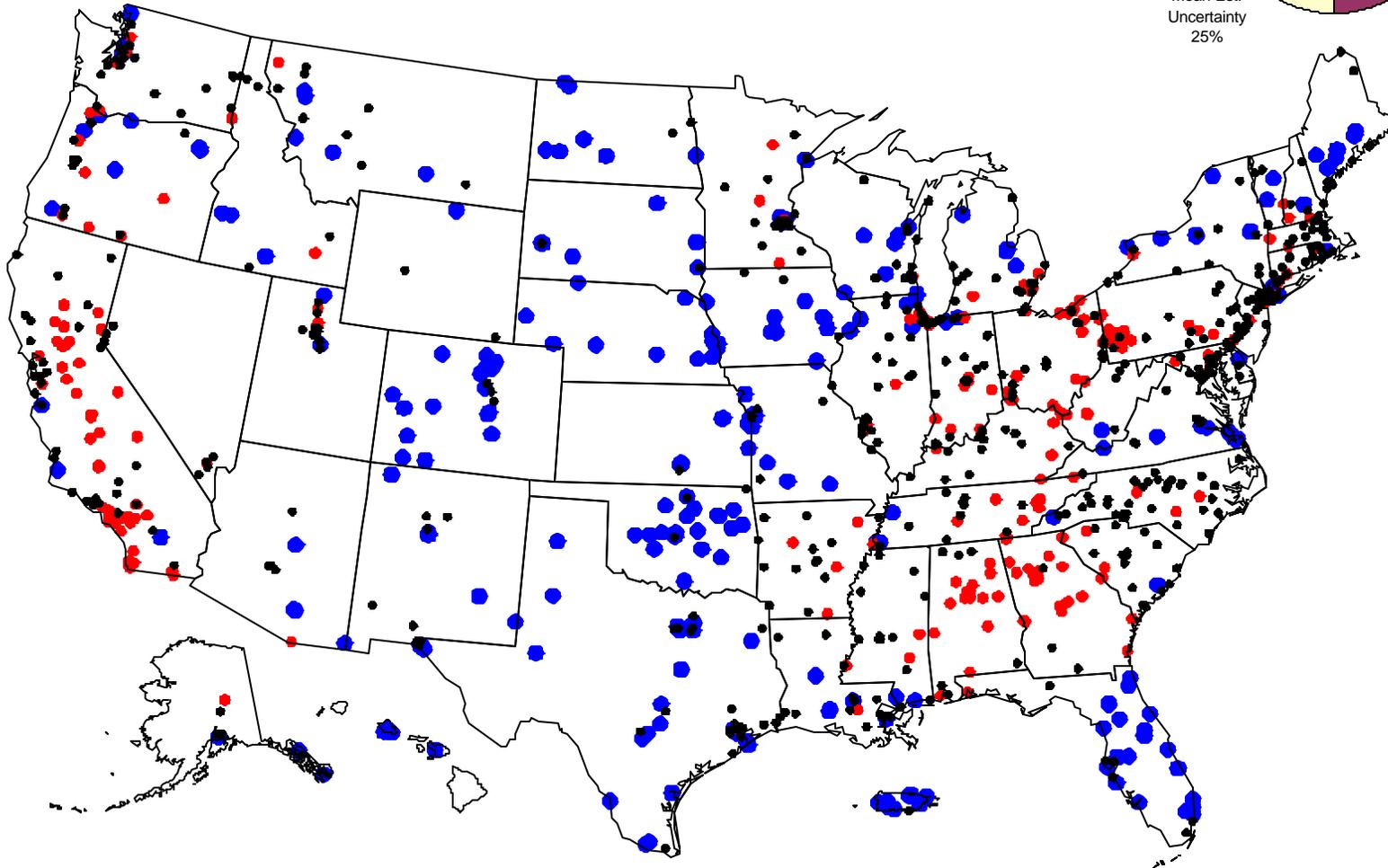
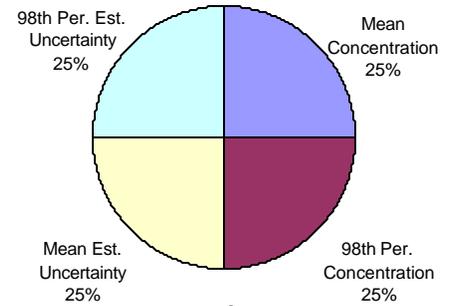
# PM25 Aggregate Ranking Map: Red=High Value, Blue=Low Value



PM25 Aggregate Ranking Map B: Red=High Value, Blue=Low Value

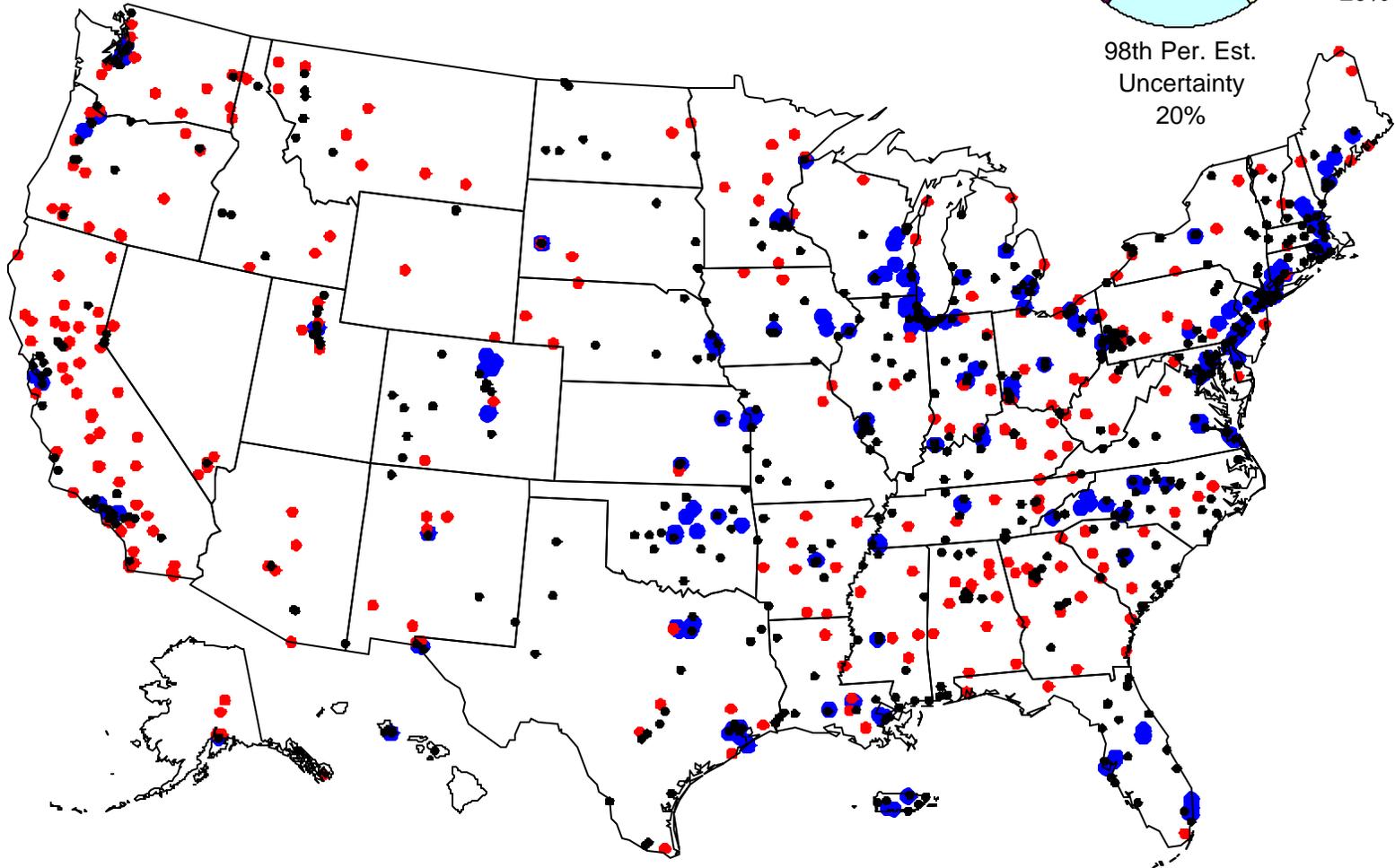
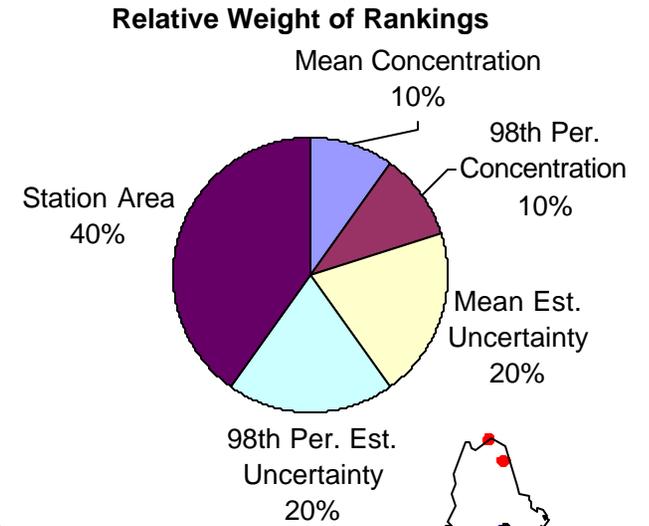
# PM25 Aggregate Ranking Map: Red=High Value, Blue=Low Value

Relative Weight of Rankings

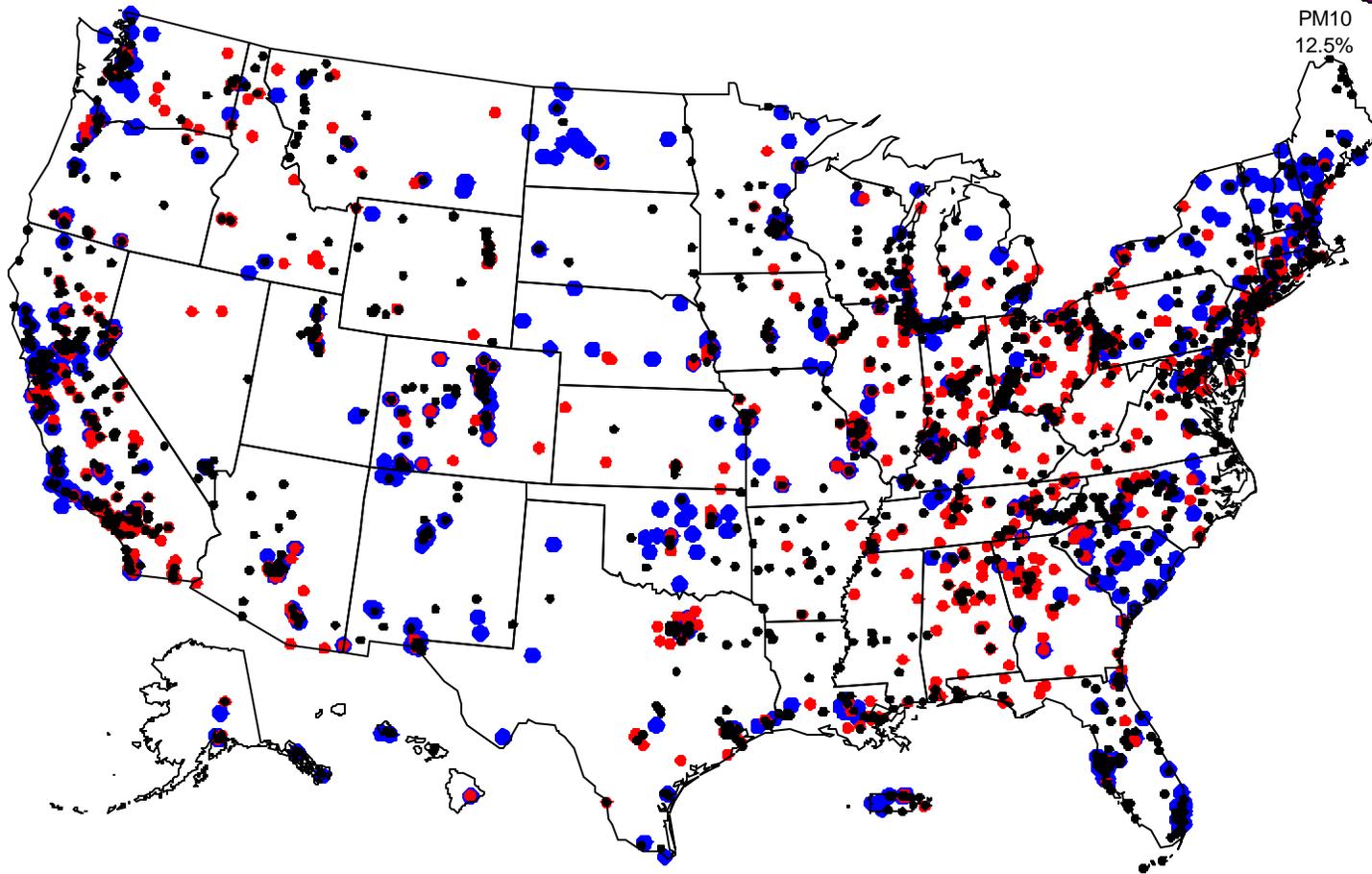
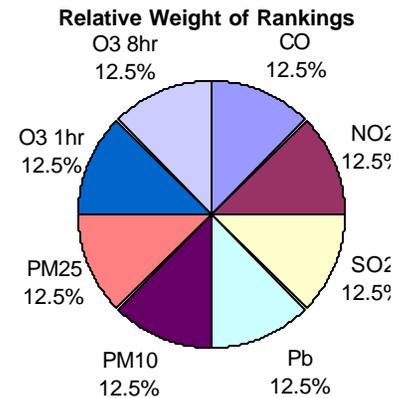


PM25 Aggregate Ranking Map C: Red=High Value, Blue=Low Value

# PM25 Aggregate Ranking Map: Red=High Value, Blue=Low Value



# Aggregate Ranking Map for All Pollutants: Red=High Value, Blue=Low Value

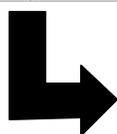


Aggregate Ranking Map for All Pollutants: Red=High Value, Blue=Low Value

# Frequency of Pollutant Collocation

All 7 Criteria Pollutants Considered	
Number of Pollutants Measured at Site	Number of Sites
1	1682
2	666
3	243
4	119
5	107
6	43
7	8
Total	2868

Only 6 Criteria Pollutants - Sans Pb	
Number of Pollutants Measured at Site	Number of Sites
1	1604
2	669
3	223
4	123
5	110
6	34
Total	2763



Pollutants Measured	# Pollutants	Number of Sites
pm10	1	470
o3	1	423
pm25	1	373
pm10 pm25	2	278
co	1	166
so2	1	165
o3 pm25	2	84
o3 no2	2	75
o3 so2	2	66
o3 co no2 pm10 pm25	5	41
so2 pm10	2	39
o3 pm10	2	35
o3 no2 pm25	3	35
o3 co no2 so2 pm10 pm25	6	34
o3 pm10 pm25	3	30
o3 co	2	25
o3 so2 pm25	3	21
o3 co no2 so2 pm10	5	21
so2 pm10 pm25	3	20
o3 no2 so2	3	20
o3 so2 pm10 pm25	4	20
o3 co no2 so2 pm25	5	20
o3 no2 so2 pm10 pm25	5	19
co pm10	2	18
o3 co pm10	3	17
co so2	2	16
no2 so2	2	14
o3 no2 so2 pm25	4	14
o3 co no2 so2	4	14
co no2 so2	3	12

Pollutants Measured	# Pollutants	Number of Sites
o3 co no2	3	12
o3 no2 pm10 pm25	4	12
co pm10 pm25	3	11
o3 co no2 pm25	4	11
o3 co no2 pm10	4	11
o3 no2 pm10	3	10
o3 so2 pm10	3	9
o3 co pm10 pm25	4	9
no2	1	7
co so2 pm10 pm25	4	7
o3 no2 so2 pm10	4	7
so2 pm25	2	6
co no2	2	6
no2 so2 pm10	3	6
co no2 so2 pm10	4	6
o3 co pm25	3	5
o3 co so2	3	5
co no2 so2 pm25	4	5
co no2 so2 pm10 pm25	5	5
co pm25	2	4
no2 so2 pm10 pm25	4	4
o3 co so2 pm10 pm25	5	4
no2 pm10	2	3
co so2 pm25	3	3
co no2 pm10	3	3
co so2 pm10	3	2
co no2 pm25	3	2
co no2 pm10 pm25	4	2
o3 co so2 pm25	4	1

# PM25 Collocation Map (Coarse Value Example)

Red=Collocated w/ PM10, Blue=PM25 only,

Black=PM25 and non-PM10 Pollutants

