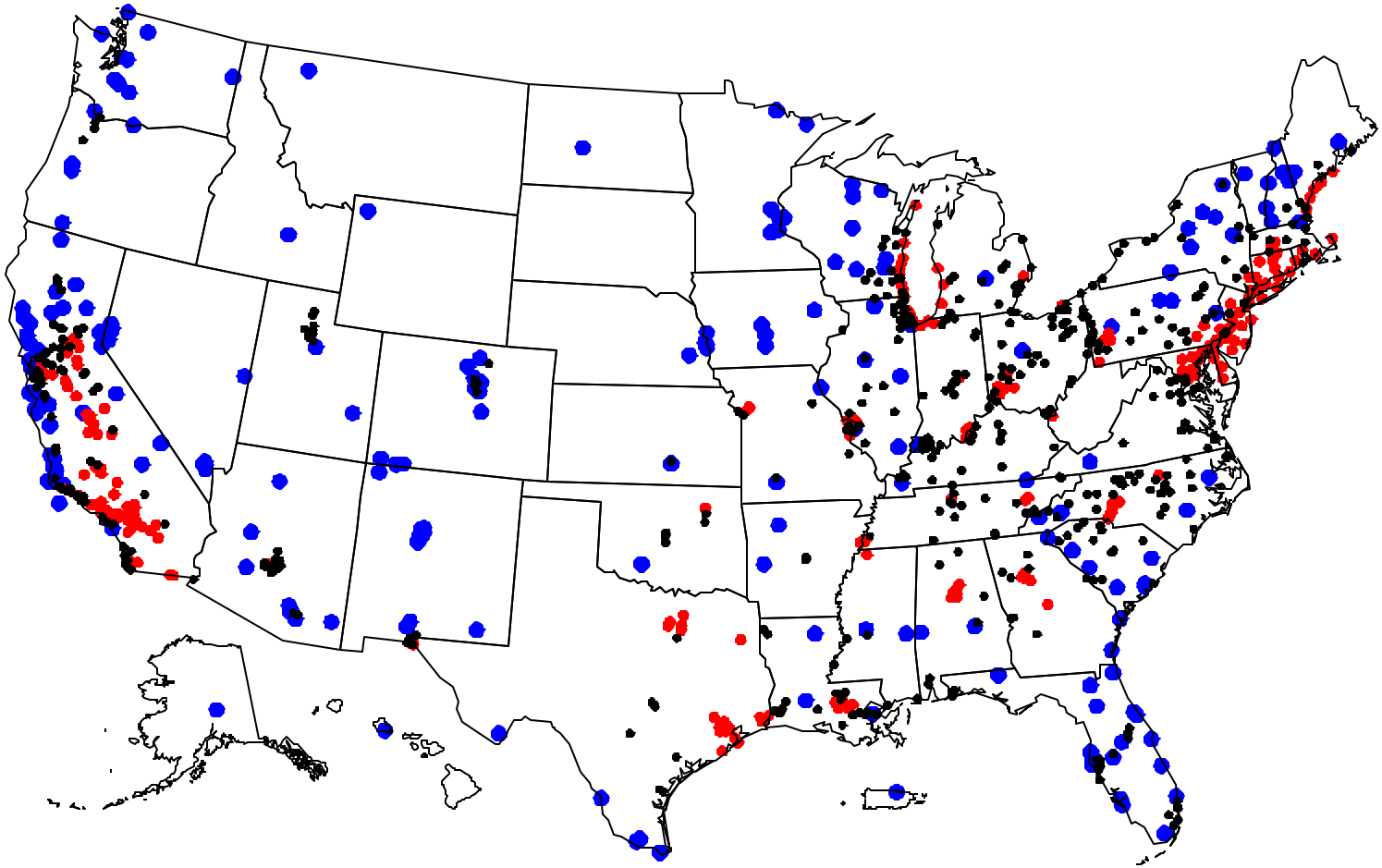
National Assessment of the Existing Criteria Pollutant Monitoring Networks

O_3, CO, NO_2, SO_2, Pb, PM_{10}, $PM_{2.5}$

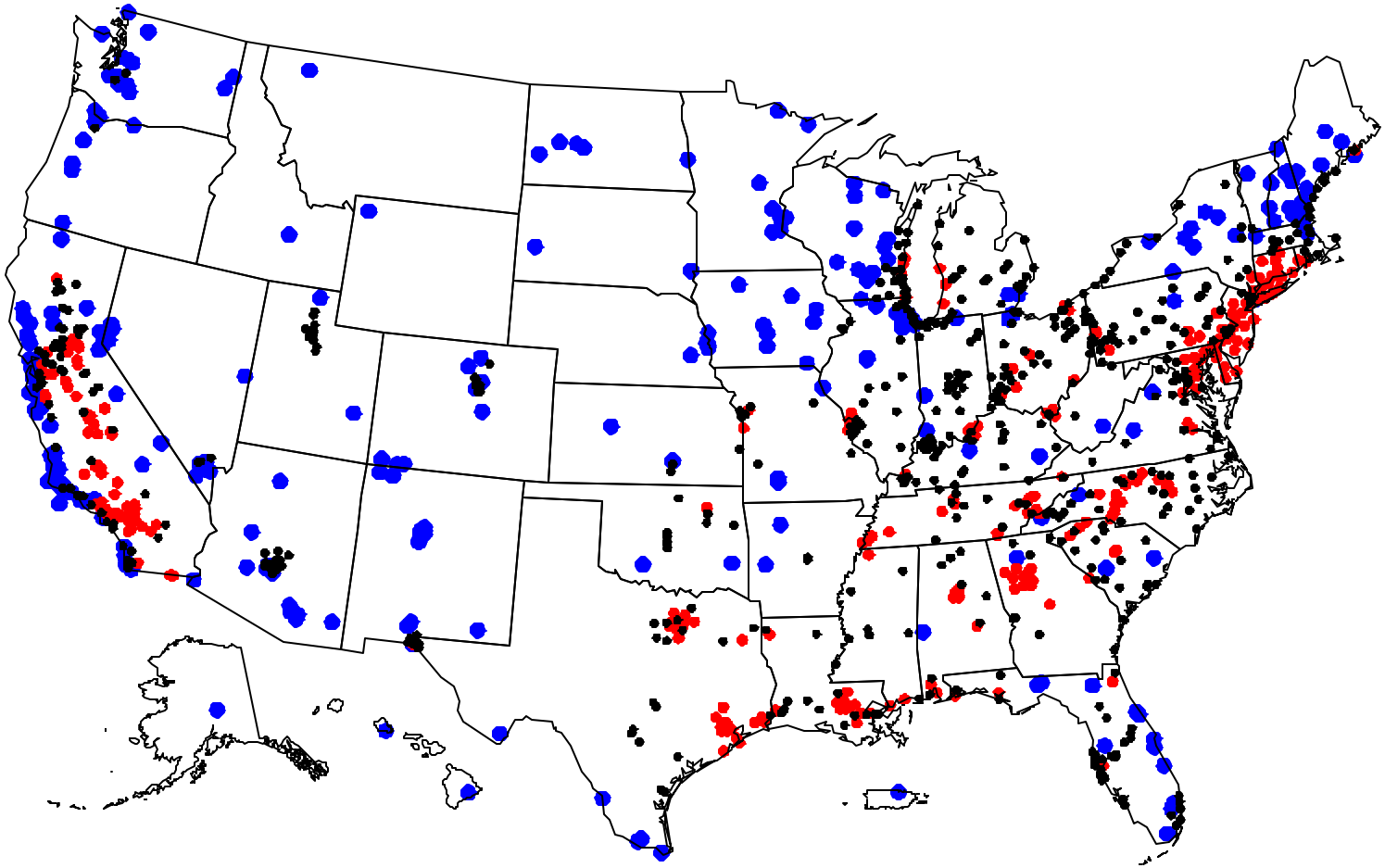
Part 2 - July 25, 2001

95-97 1-Hour O3 2nd Max: Red=Large Value, Blue=Small Value



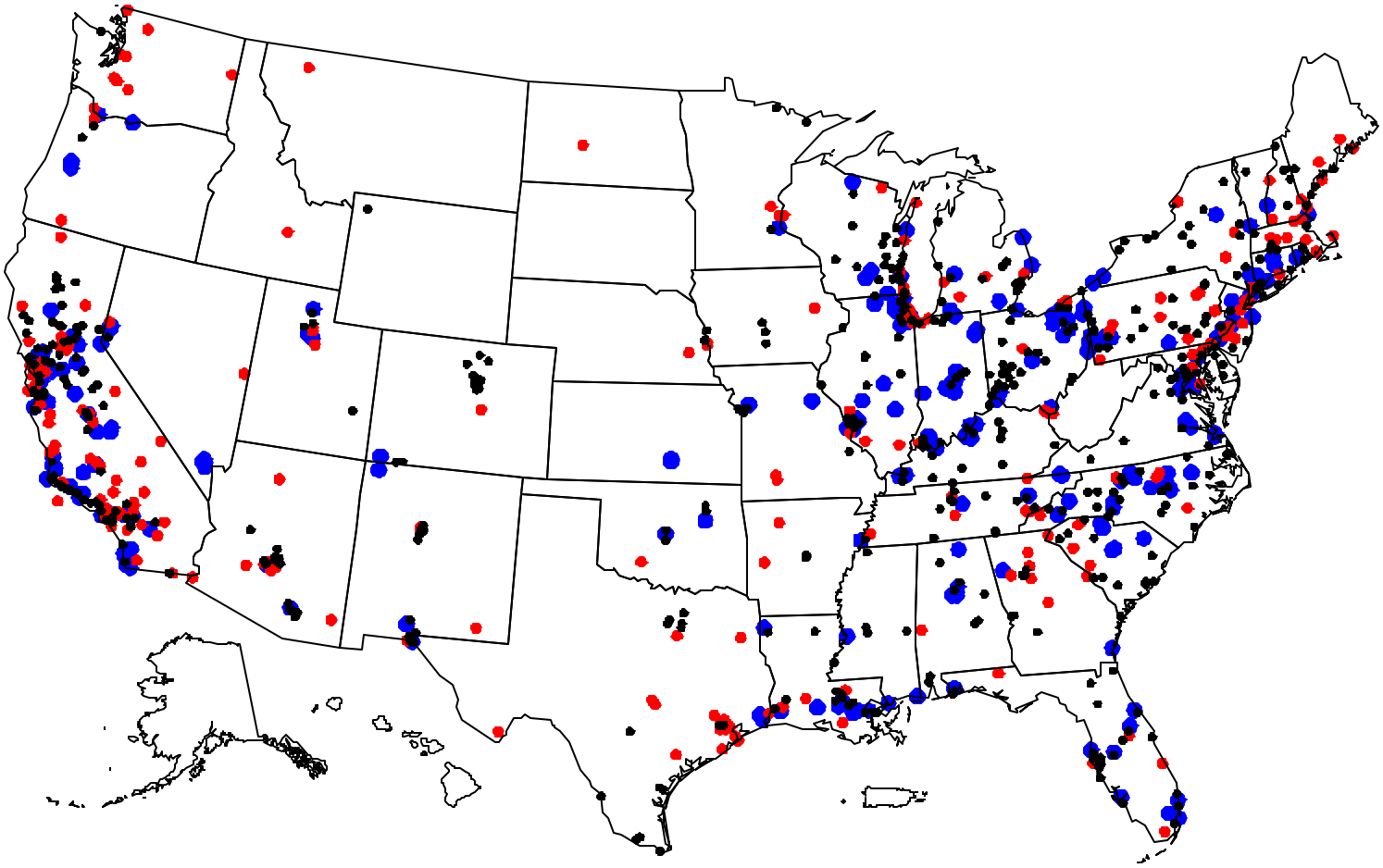
95-97 1hr O3 2nd Max Red=Large Value, Blue=Small Value

98-00 1-Hour O3 2nd Max: Red=Large Value, Blue=Small Value



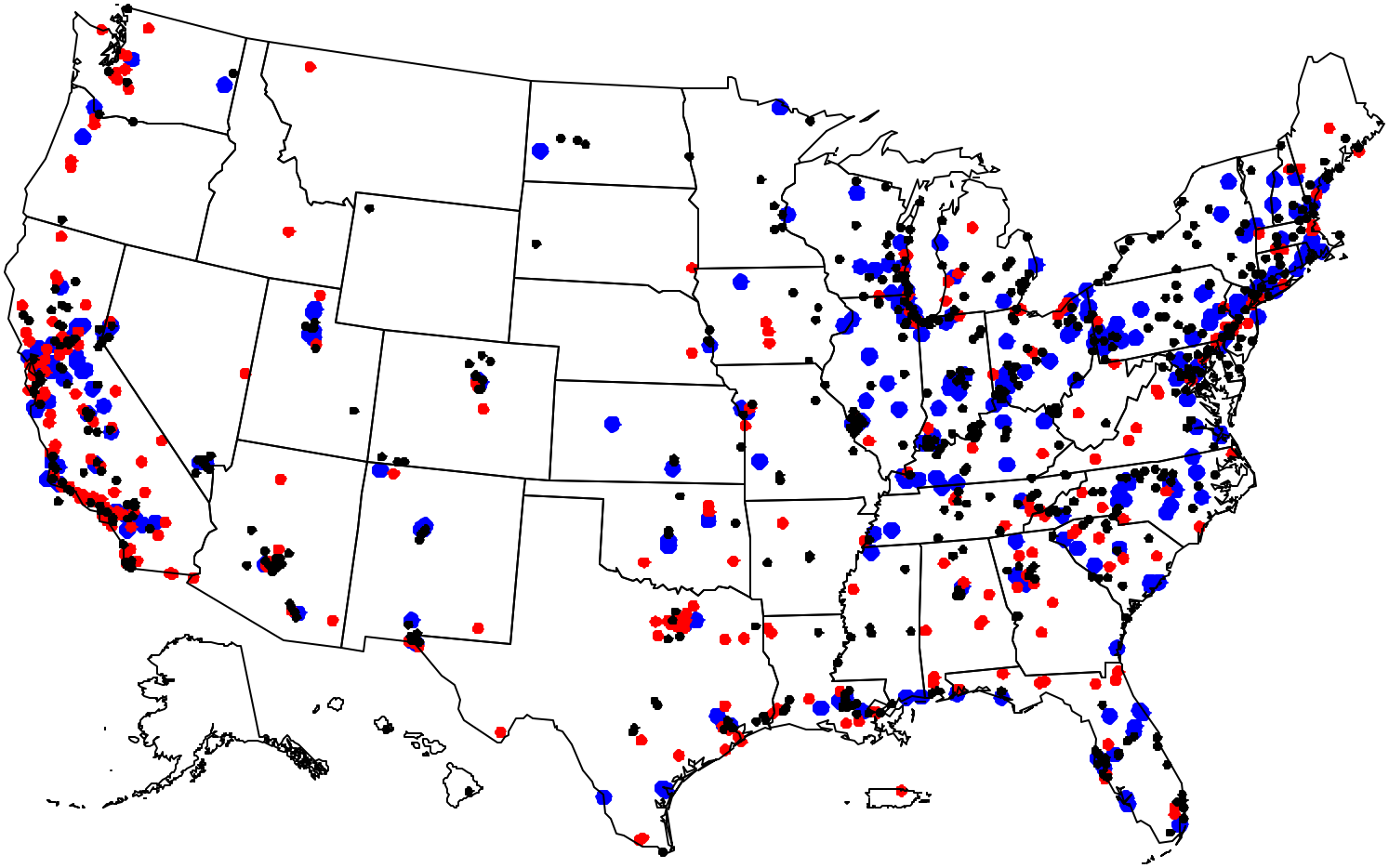
98-00 1hr O3 2nd Max: Red=Large Value, Blue=Small Value

Predicting 1hr O3 2nd Max (95-97): Red=High Uncertainty, Blue=Low Uncertainty



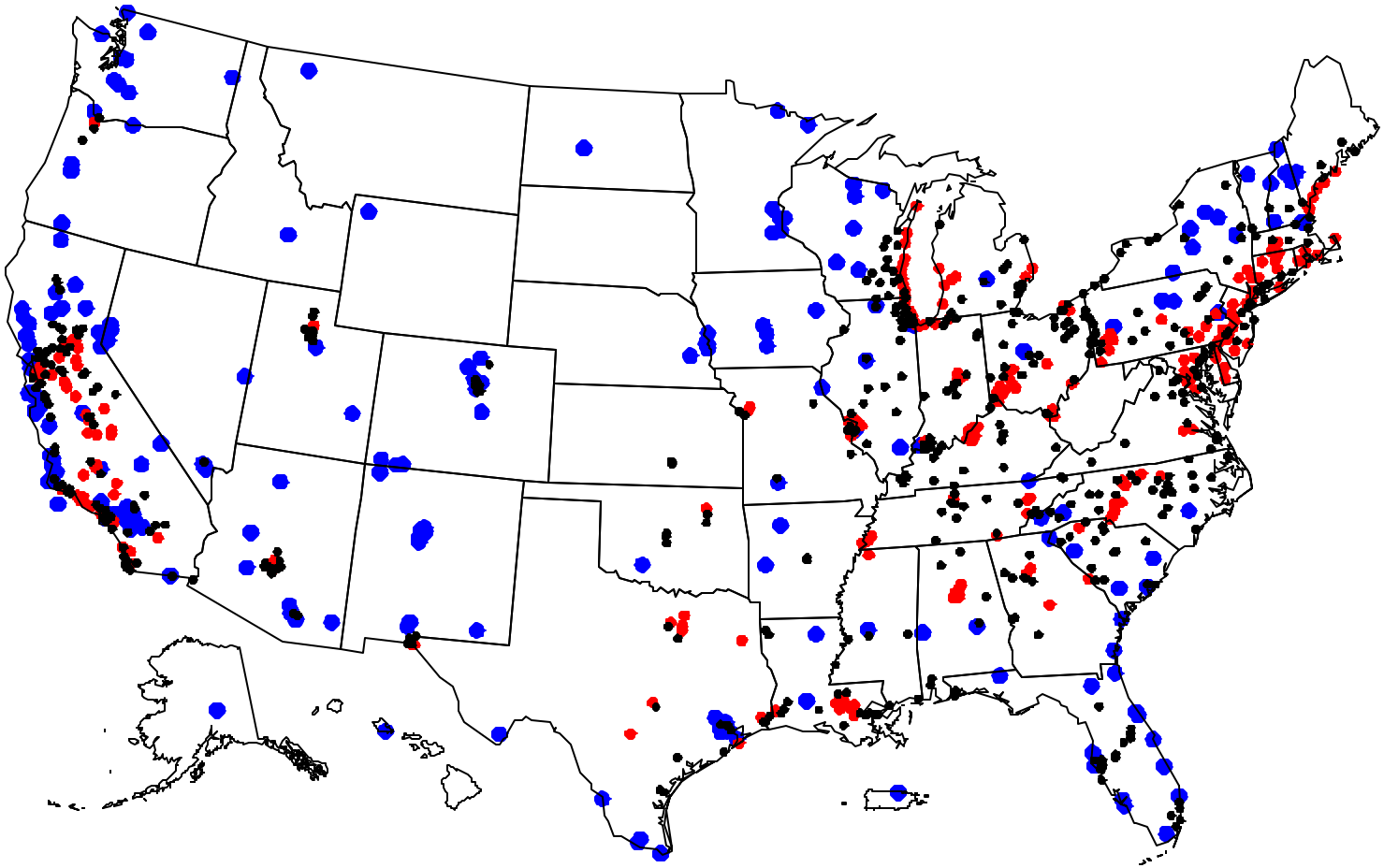
Predicting 1hr O3 2nd Max (95-97): Red=High Uncertainty, Blue=Low Uncertainty

Predicting 1hr O3 2nd Max (98-00): Red=High Uncertainty, Blue=Low Uncertainty



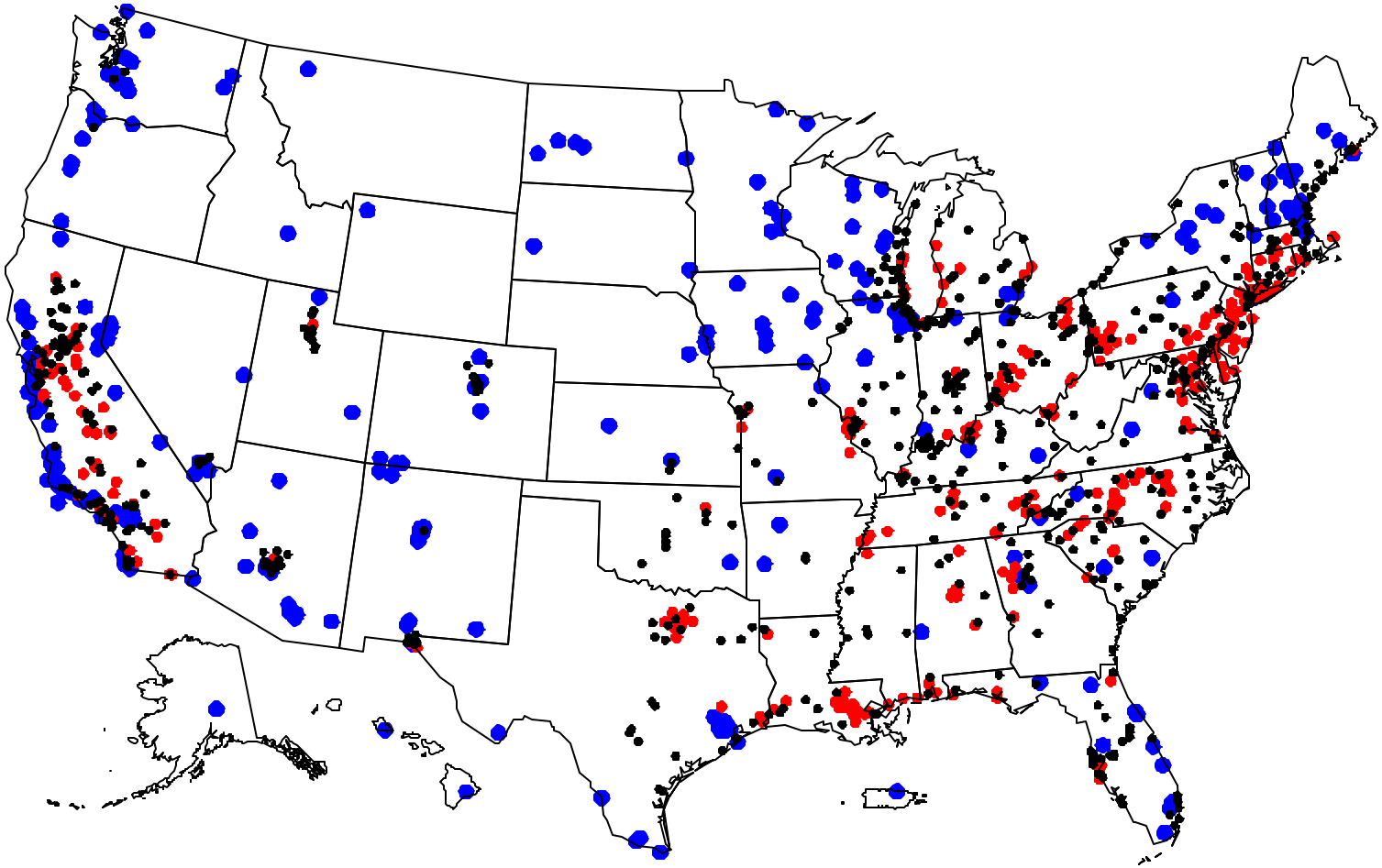
Predicting 1hr O3 2nd Max (98-00): Red=High Uncertainty, Blue=Low Uncertainty

Deviation from O3 2nd Max NAAQS (95-97): Red=Small Deviation, Blue=Large Deviation



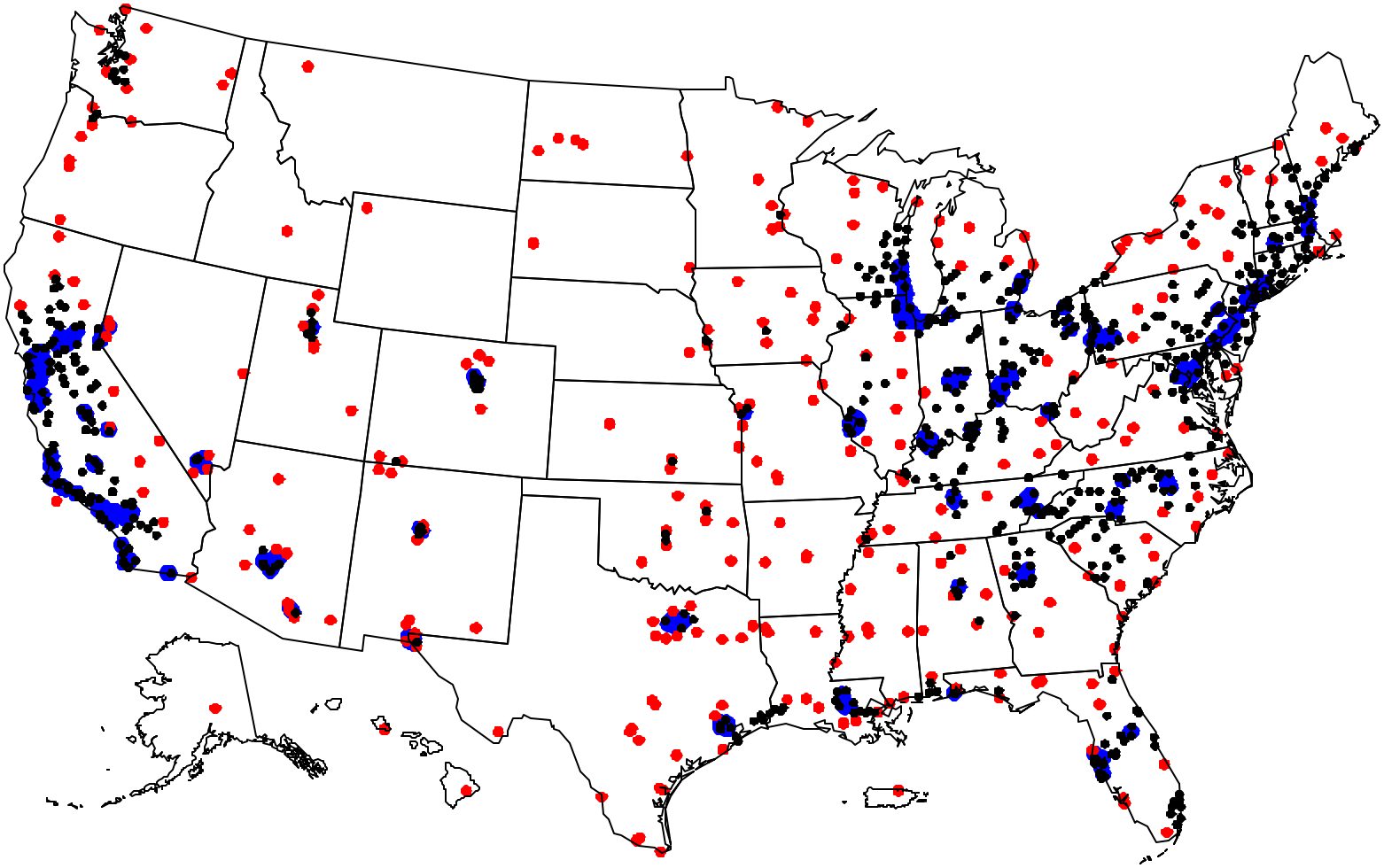
Deviation from O3 2nd Max NAAQS (95-97): Red=Small Deviation, Blue=Large Deviation

Deviation from O3 2nd Max NAAQS (98-00): Red=Small Deviation, Blue=Large Deviation

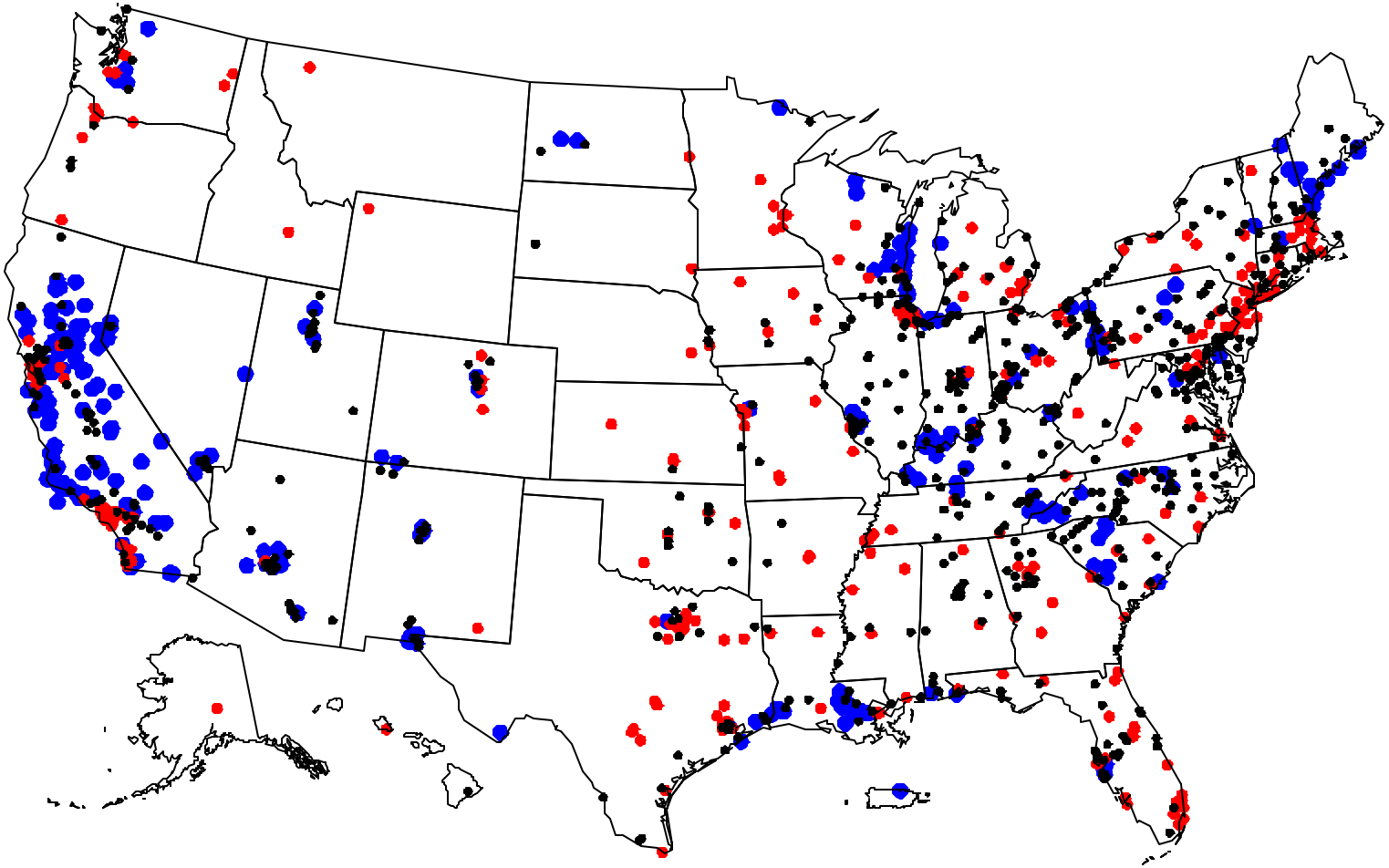


Deviation from O3 2nd Max NAAQS (98-00): Red=Small Deviation, Blue=Large Deviation

Area for 1hr O3 Monitors: Red=Large Area, Blue=Small Area



Population for 1hr O3 Monitors: Red=Large Population, Blue=Small Population



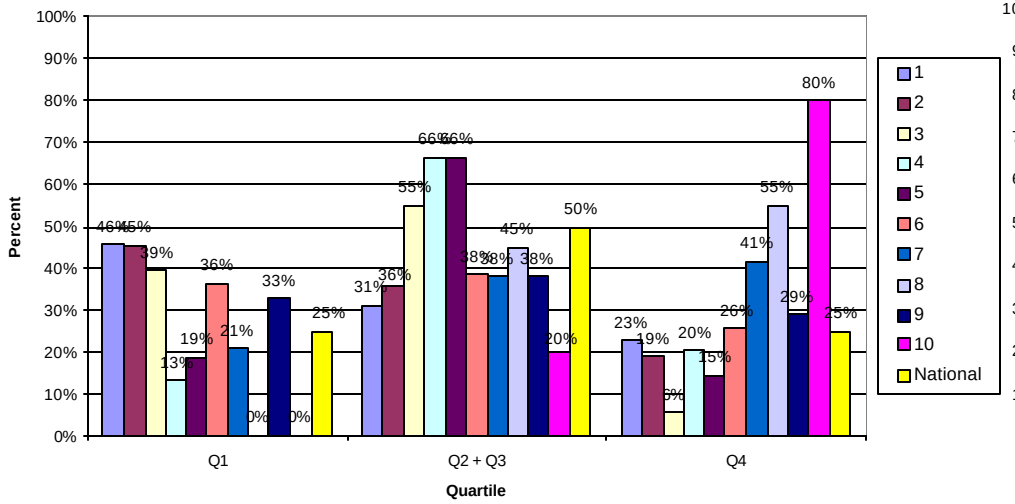
Population for 1hr O3 Monitors: Red=Large Population, Blue=Small Population

1-Hour O3 Quartiles

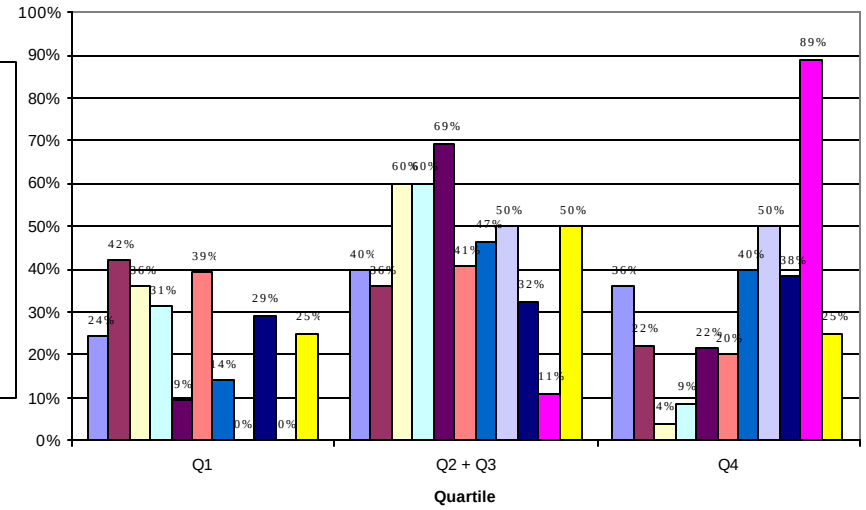
	1hr O3									
	o32x 95-97	% of NAAQS	o32x 98-00	% of NAAQS	o3error 95-97	o3error 98-00	dif_NAAQS_97	dif_NAAQS_00	area	population
Q1	0.115	95.8%	0.114	95.0%	0.0099	0.0093	0.009	0.009	7004	322552
Q3	0.093	77.5%	0.094	78.3%	0.0026	0.0024	0.029	0.0285	854.2	95079

Regional Percent of Sites in National Quartiles

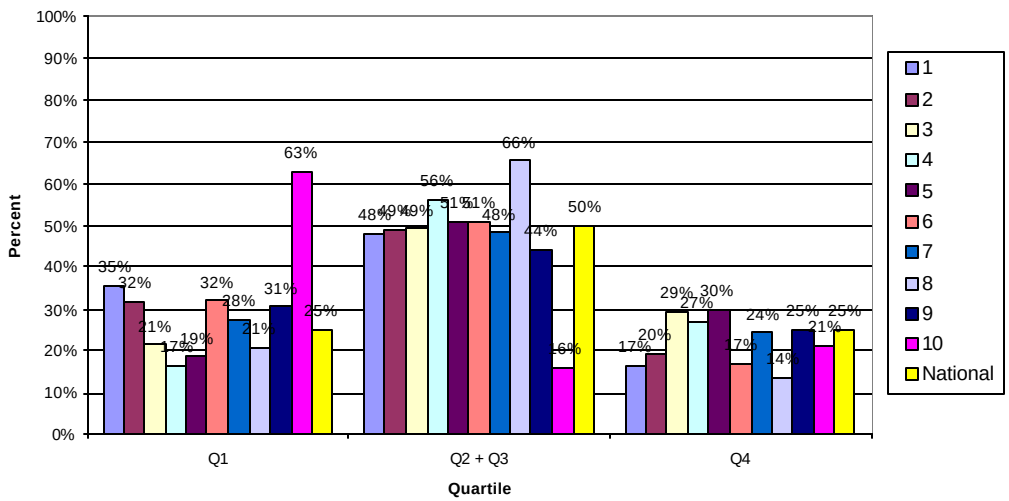
O3 1-Hour 2nd Max Concentration (95-97)



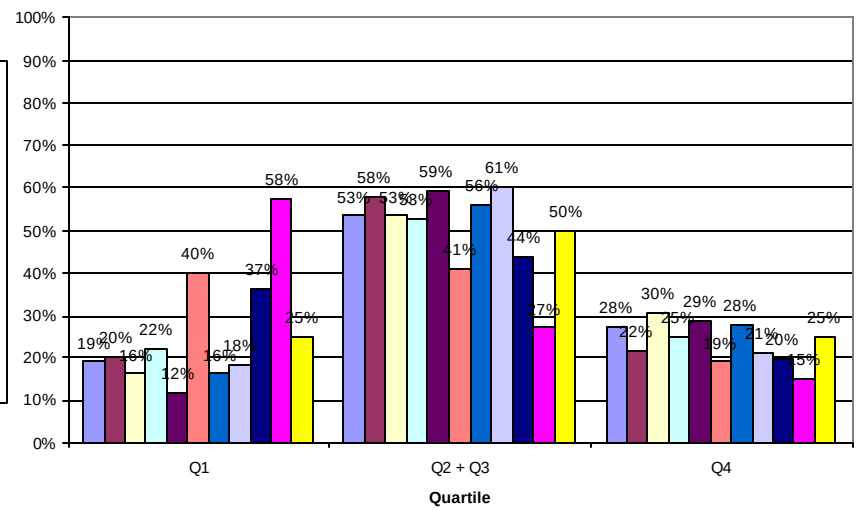
O3 1-Hour 2nd Max Concentration (98-00)



O3 1-Hour Uncertainty (95-97)

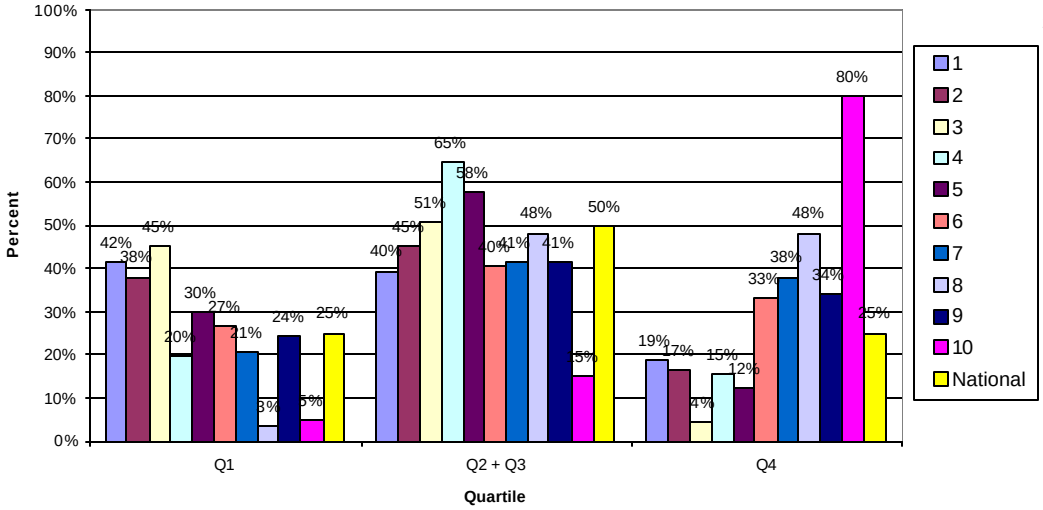


O3 1-Hour Uncertainty (98-00)

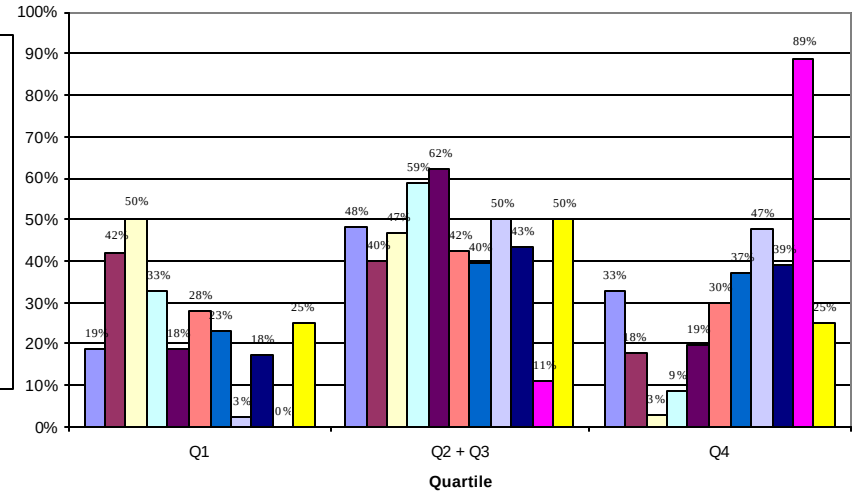


Regional Percent of Sites in National Quartiles

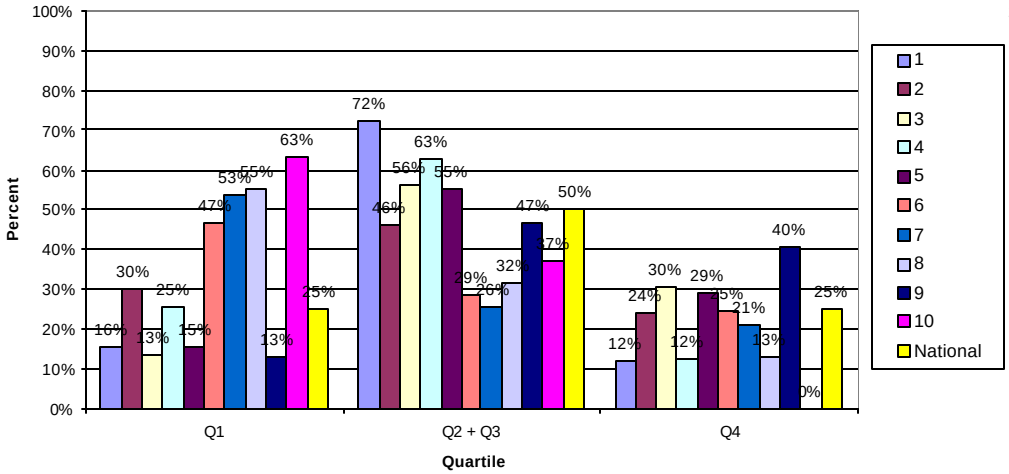
O3 1-Hour Deviation from NAAQS (95-97)



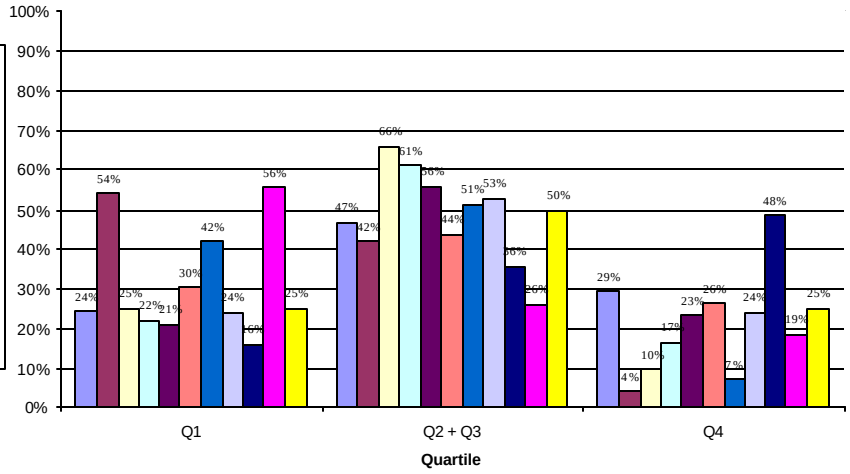
O3 1-Hour Deviation from NAAQS (98-00)



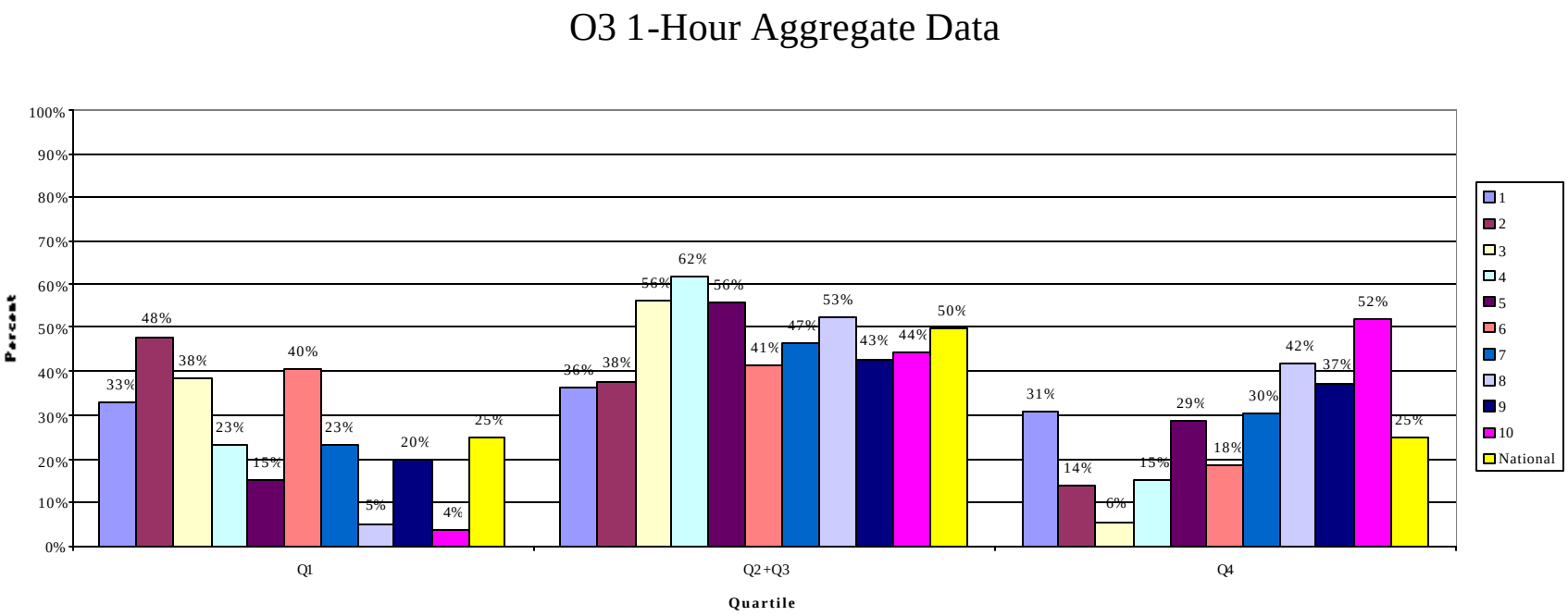
O3 1-Hour Area



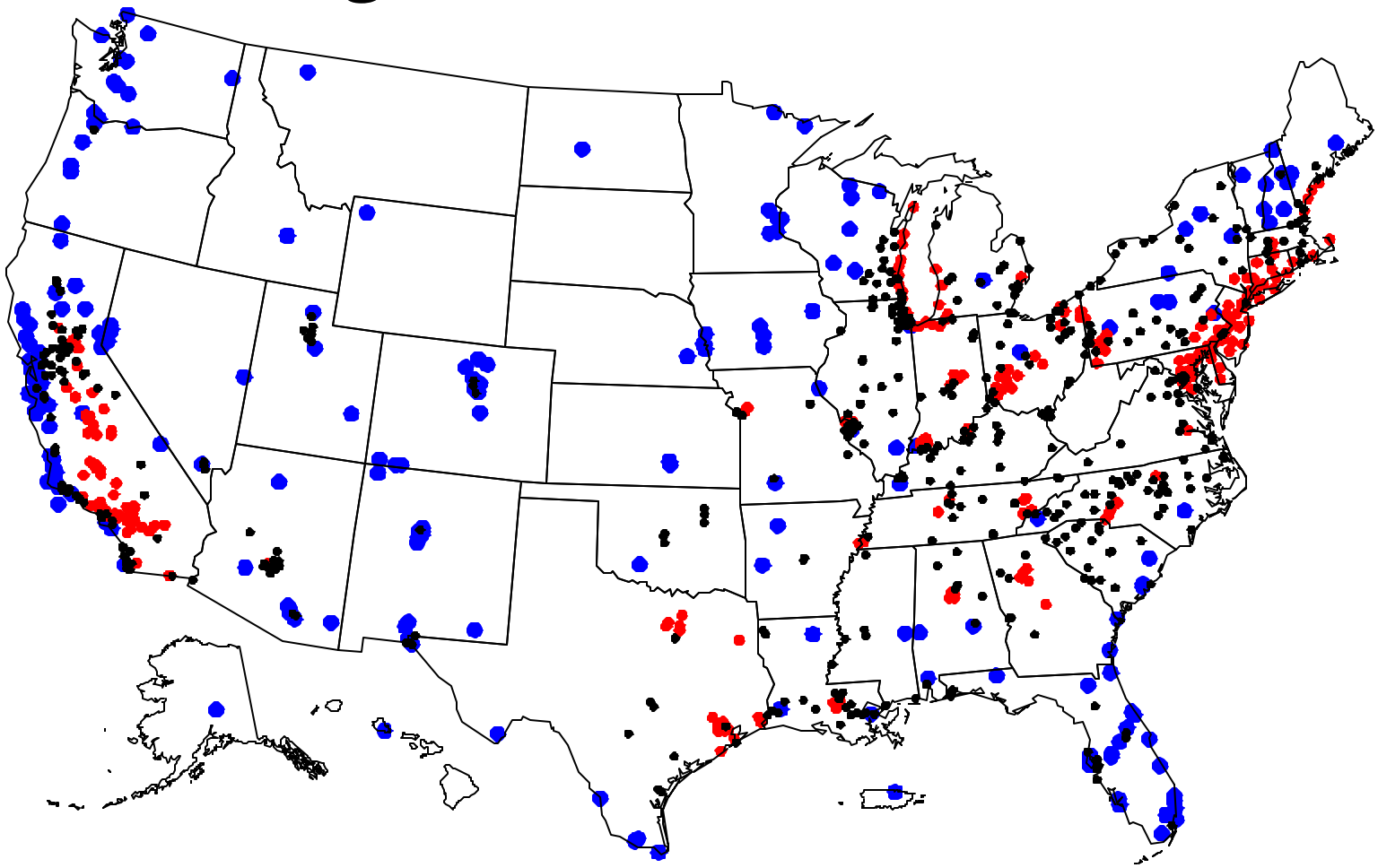
O3 1-Hour Population



Regional Percent of Sites in National Quartiles

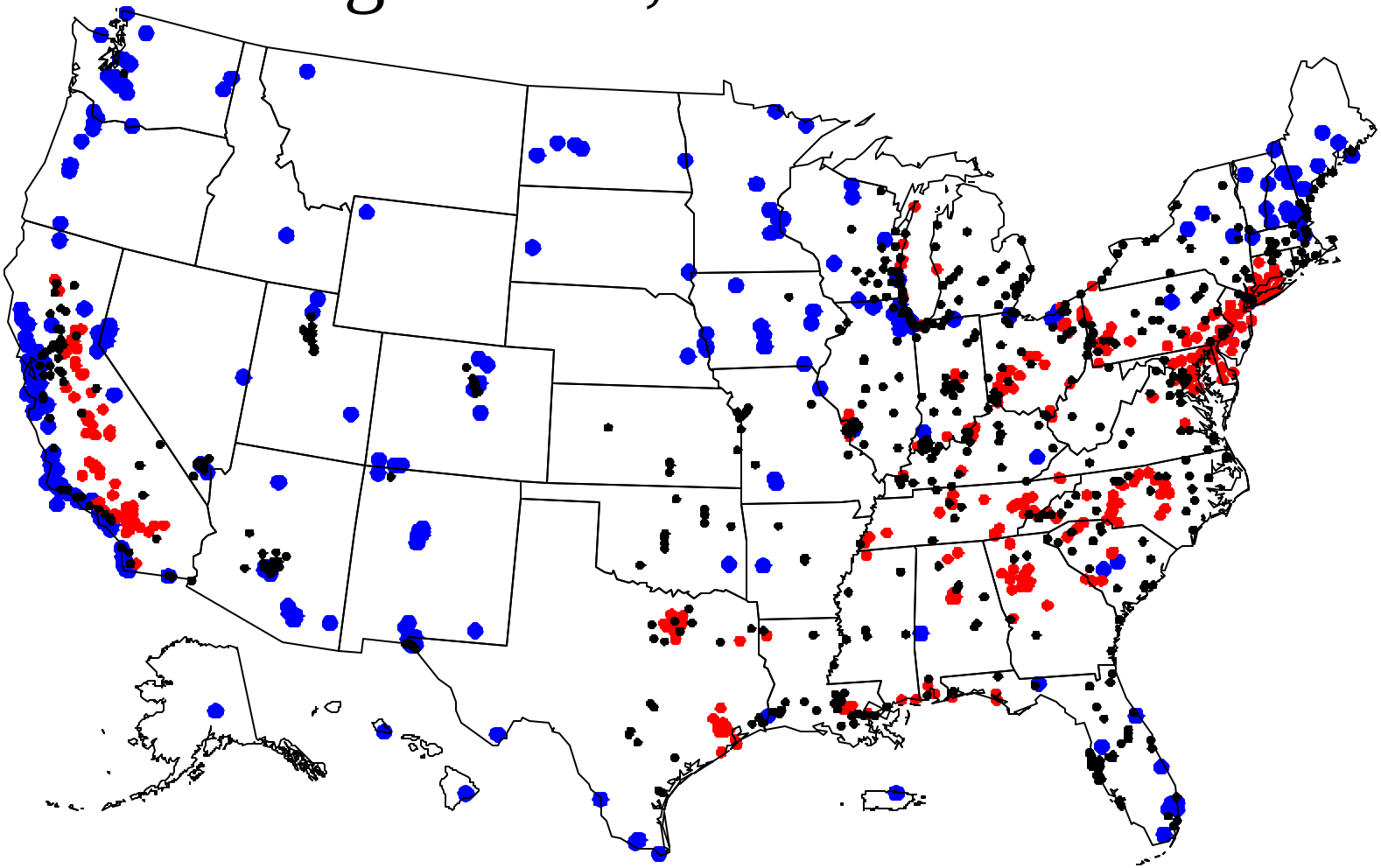


95-97 8-Hour O3 4th Max: Red=Large Value, Blue=Small Value



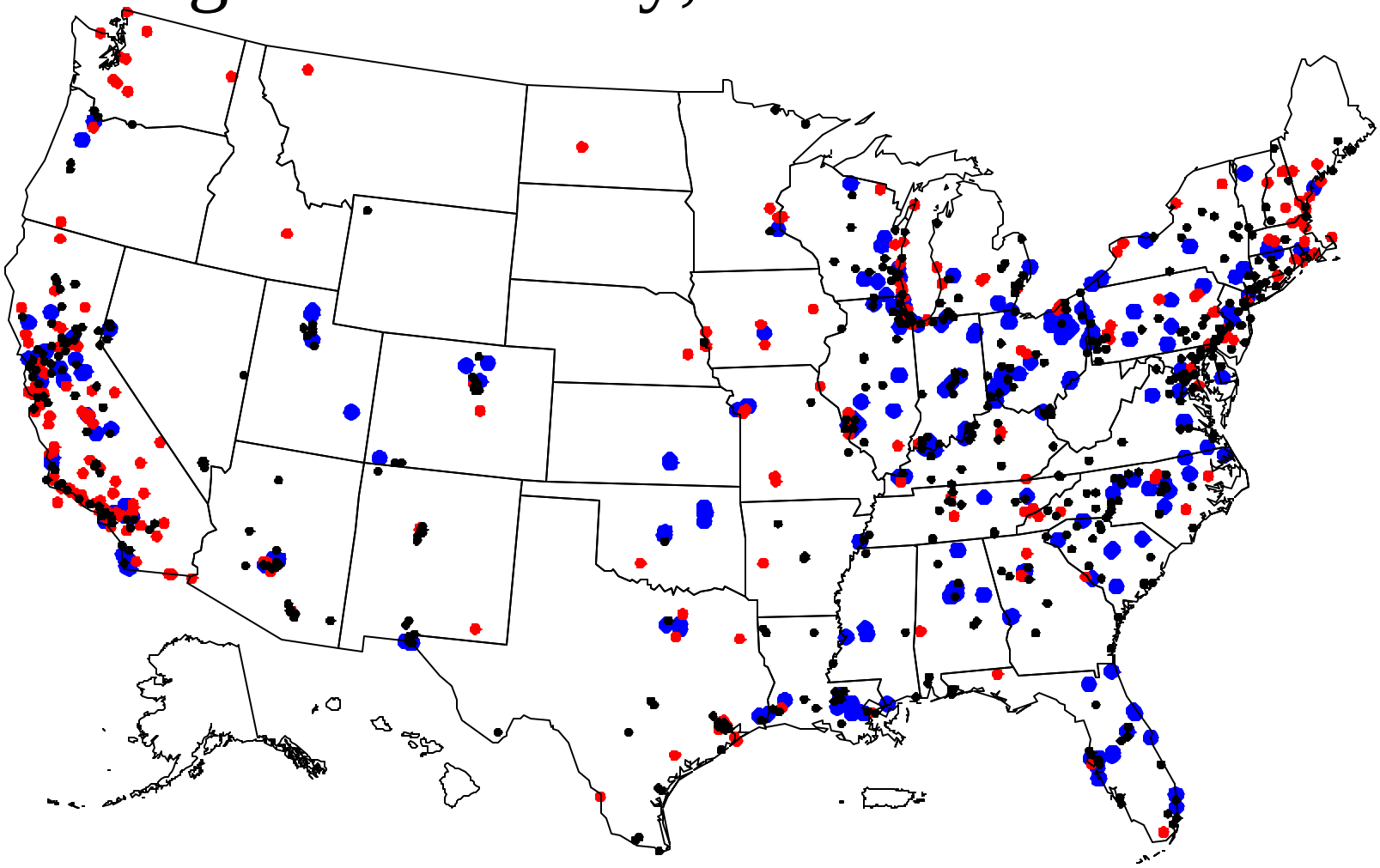
95-97 8hr O3 4th Max: Red=Large Value, Blue=Small Value

98-00 8-Hour O3 4th Max: Red=Large Value, Blue=Small Value



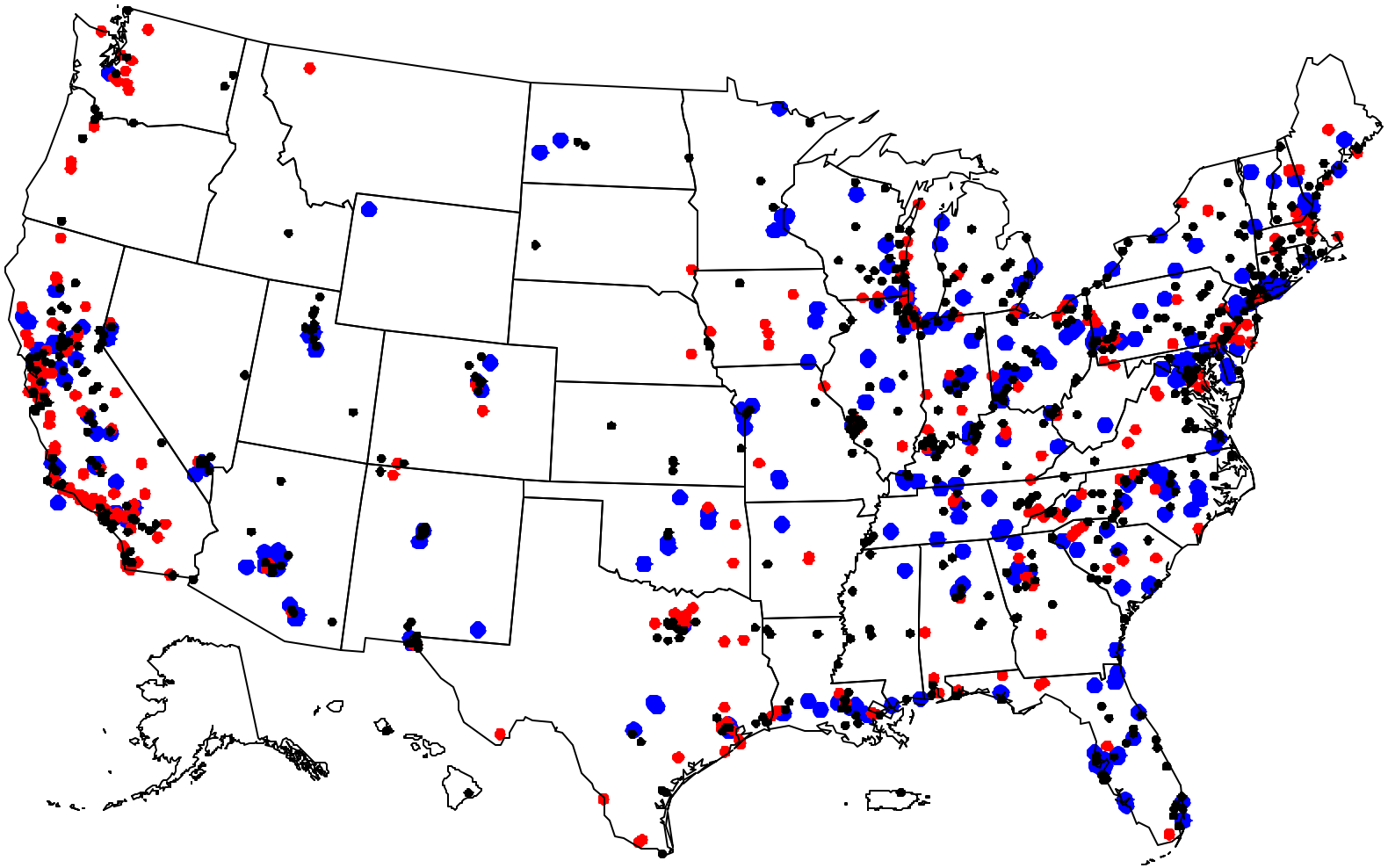
98-00 8hr O3 4th Max: Red=Large Value, Blue=Small Value

Predicting 8hr O3 4th Max (95-97): Red=High Uncertainty, Blue=Low Uncertainty



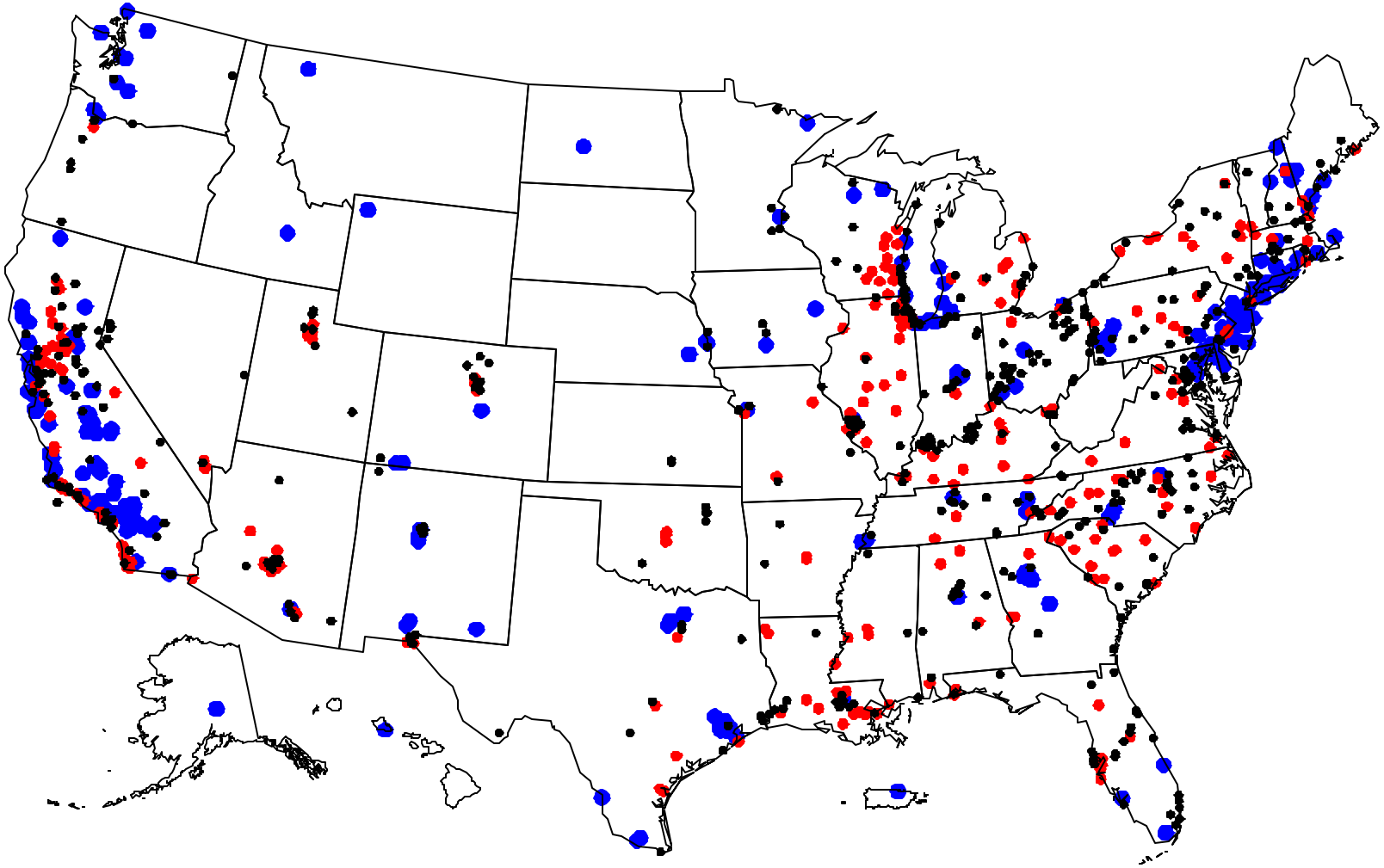
Predicting 8hr O3 4th Max (95-97): Red=High Uncertainty, Blue=Low Uncertainty

Predicting 8hr O3 4th Max (98-00): Red=High Uncertainty, Blue=Low Uncertainty



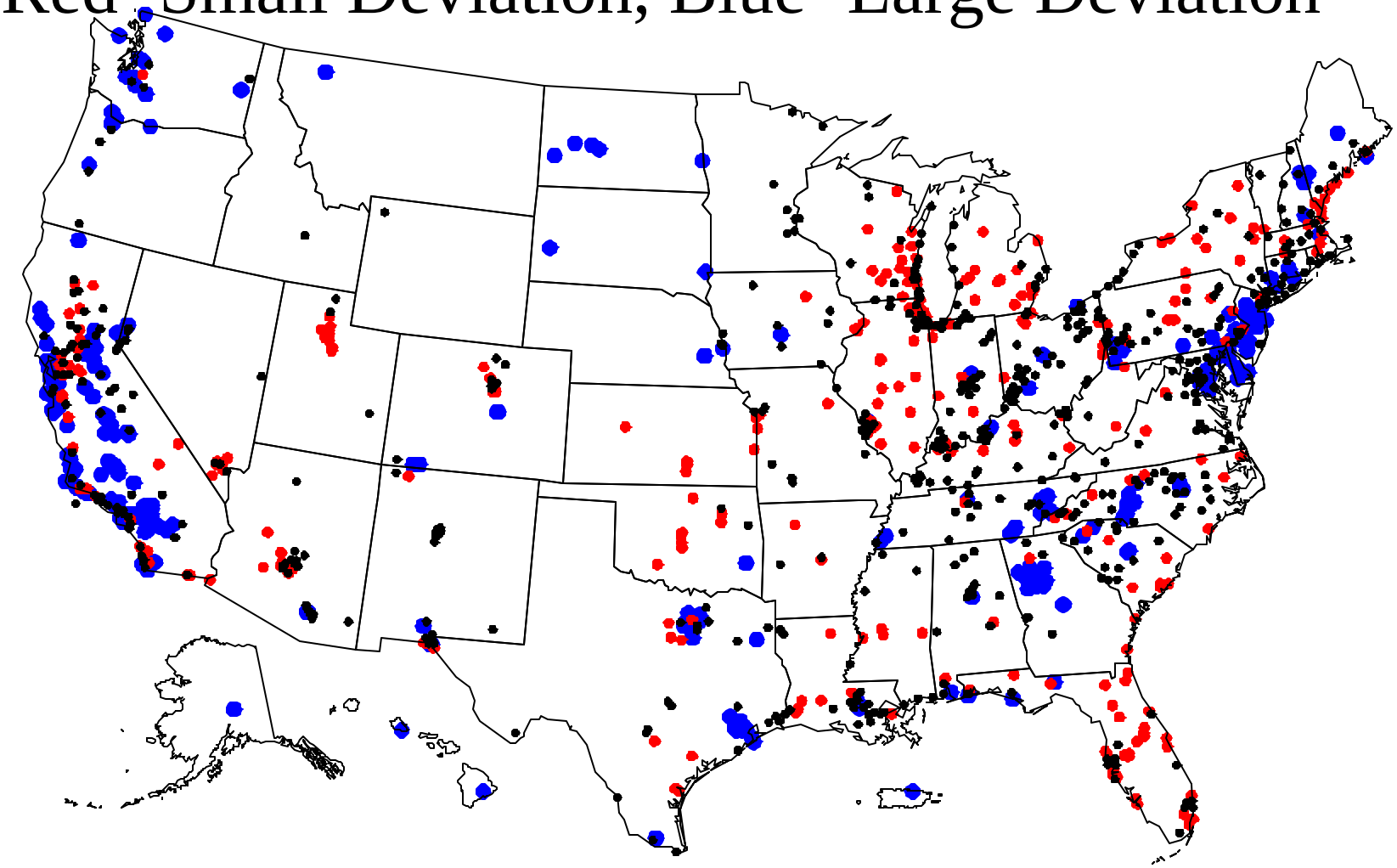
Predicting 8hr O3 4th Max (98-00): Red=High Uncertainty, Blue=Low Uncertainty

Deviation from O3 4th Max NAAQS (95-97): Red=Small Deviation, Blue=Large Deviation



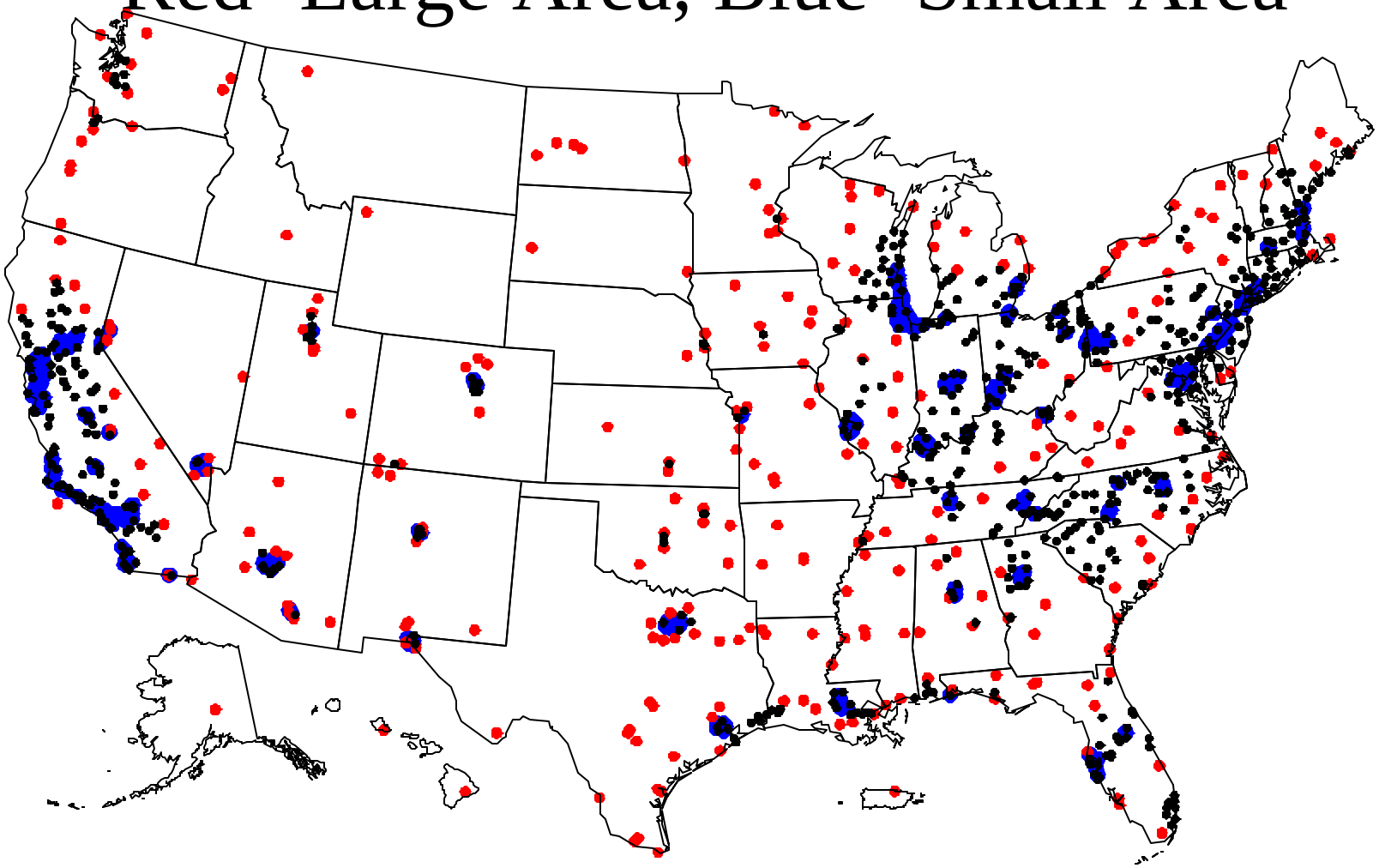
Deviation from O3 4th Max NAAQS (95-97): Red=Small Deviation, Blue=Large Deviation

Deviation from O3 4th Max NAAQS (98-00): Red=Small Deviation, Blue=Large Deviation



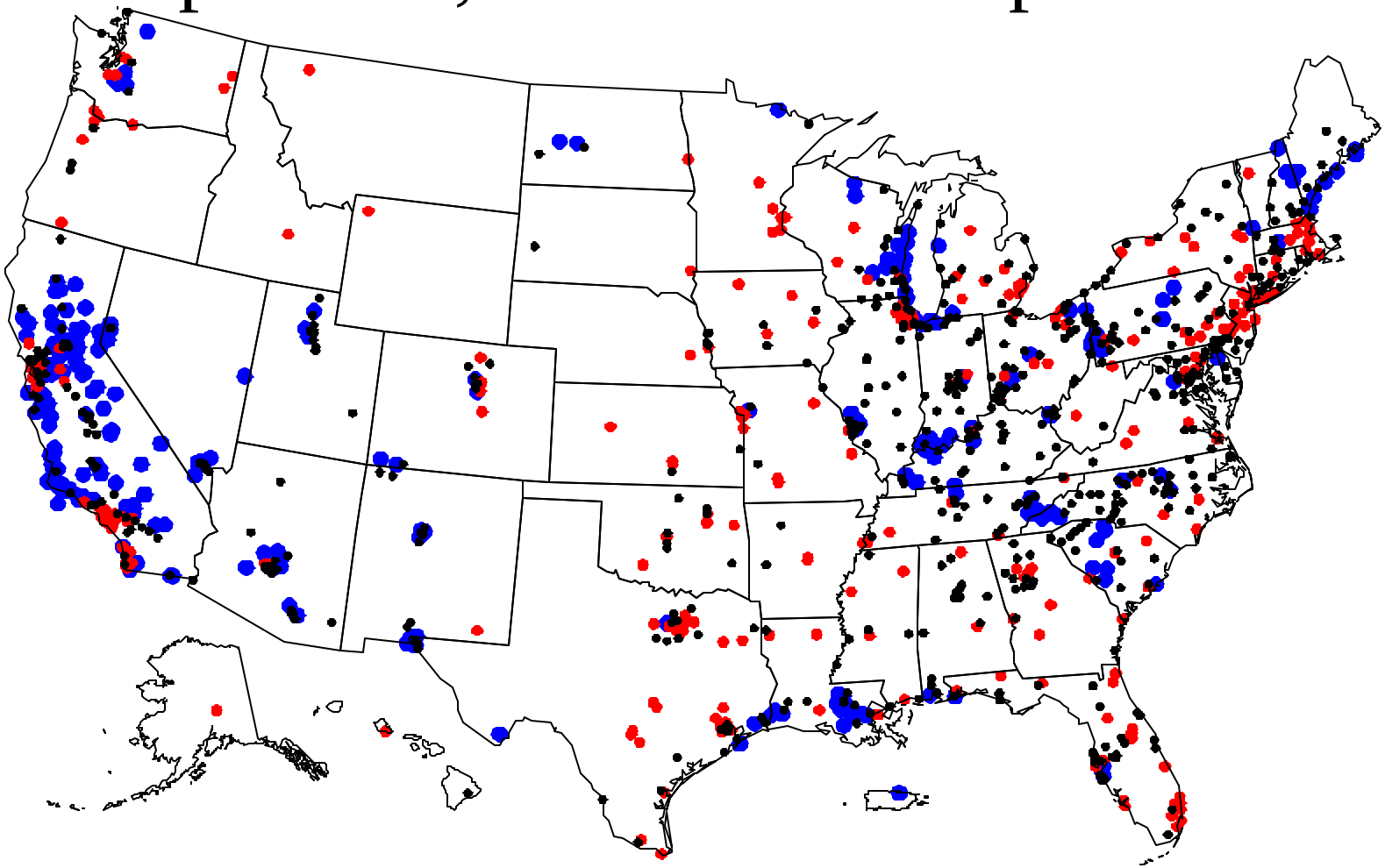
Deviation from O3 4th Max NAAQS (98-00): Red=Small Deviation, Blue=Large Deviation

Area for 8hr O3 Monitors: Red=Large Area, Blue=Small Area



Area for 8hr O3 Monitors: Red=Large Area, Blue=Small Area

Population for 8hr O3 Monitors: Red=Large Population, Blue=Small Population



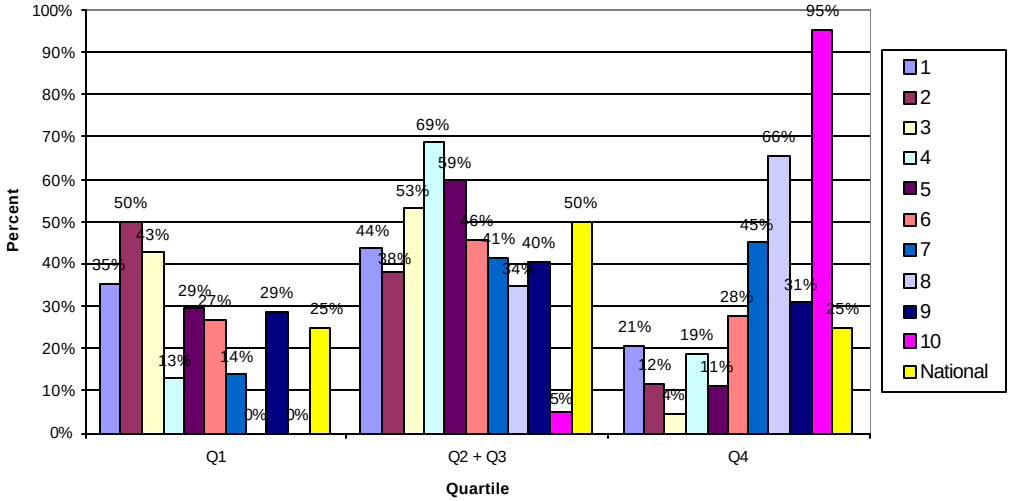
Population for 8hr O3 Monitors: Red=Large Population, Blue=Small Population

8-Hour O3 Quartiles

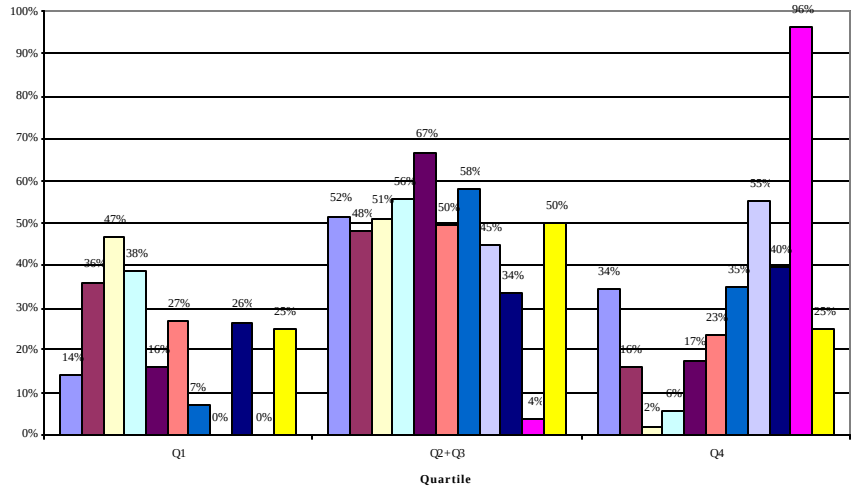
	8hr O3									
	o34x 95-97	% of NAAQS	o34x 98-00	% of NAAQS	o3error 95-97	o3error 98-00	dif_NAAQS_97	dif_NAAQS_00	area	population
Q1	0.091	113.8%	0.091	113.8%	0.0075	0.0067	0.004	0.004	6974	317204
Q3	0.075	93.8%	0.076	95.0%	0.0017	0.0017	0.014	0.014	862.8	95079

Regional Percent of Sites in National Quartiles

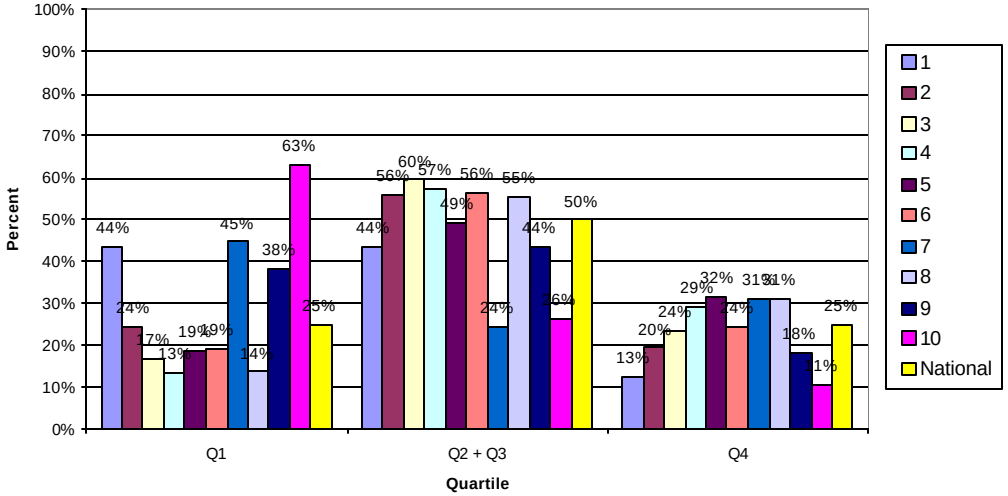
O3 8-Hour 2nd Max Concentration (95-97)



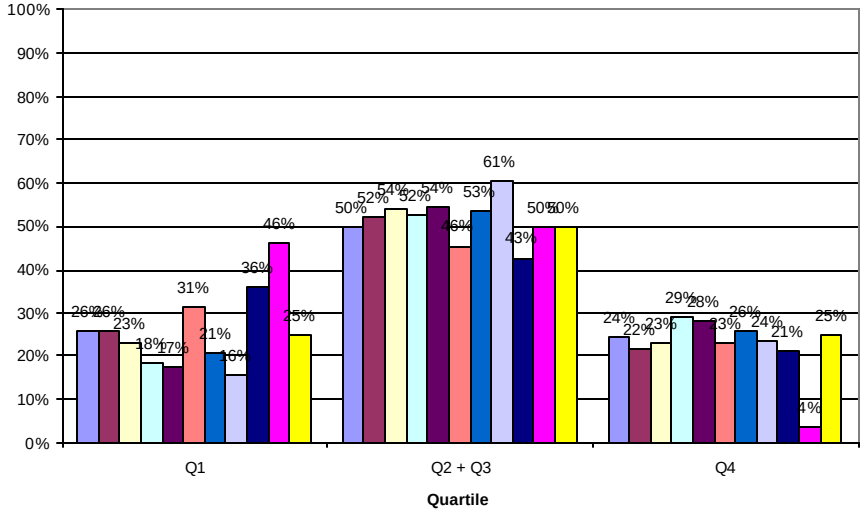
O3 8-Hour 2nd Max Concentration (98-00)



O3 8-Hour Uncertainty (95-97)

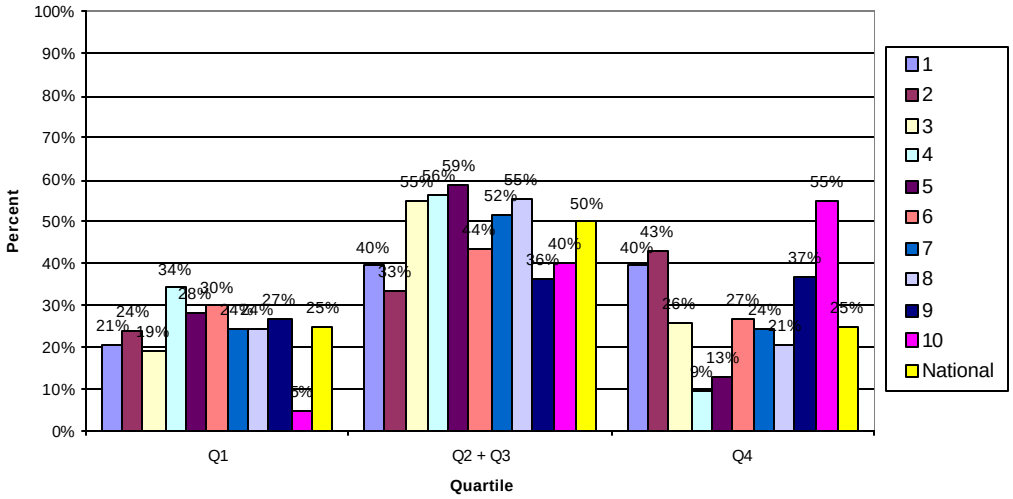


O3 8-Hour Uncertainty (98-00)

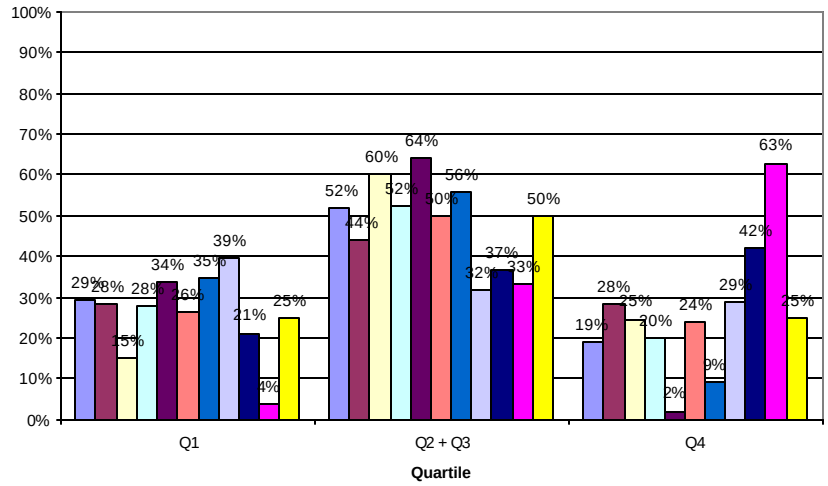


Regional Percent of Sites in National Quartiles

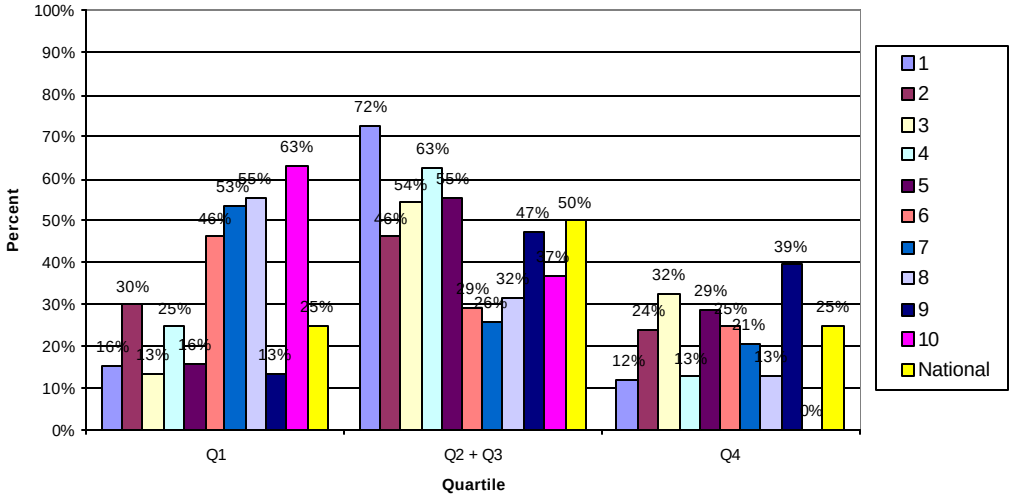
O3 8-Hour Deviation from NAAQS (95-97)



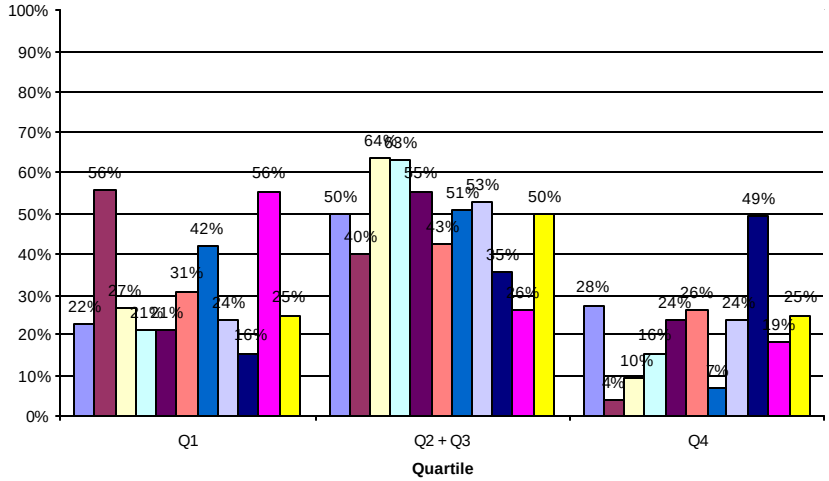
O3 8-Hour Deviation from NAAQS (98-00)



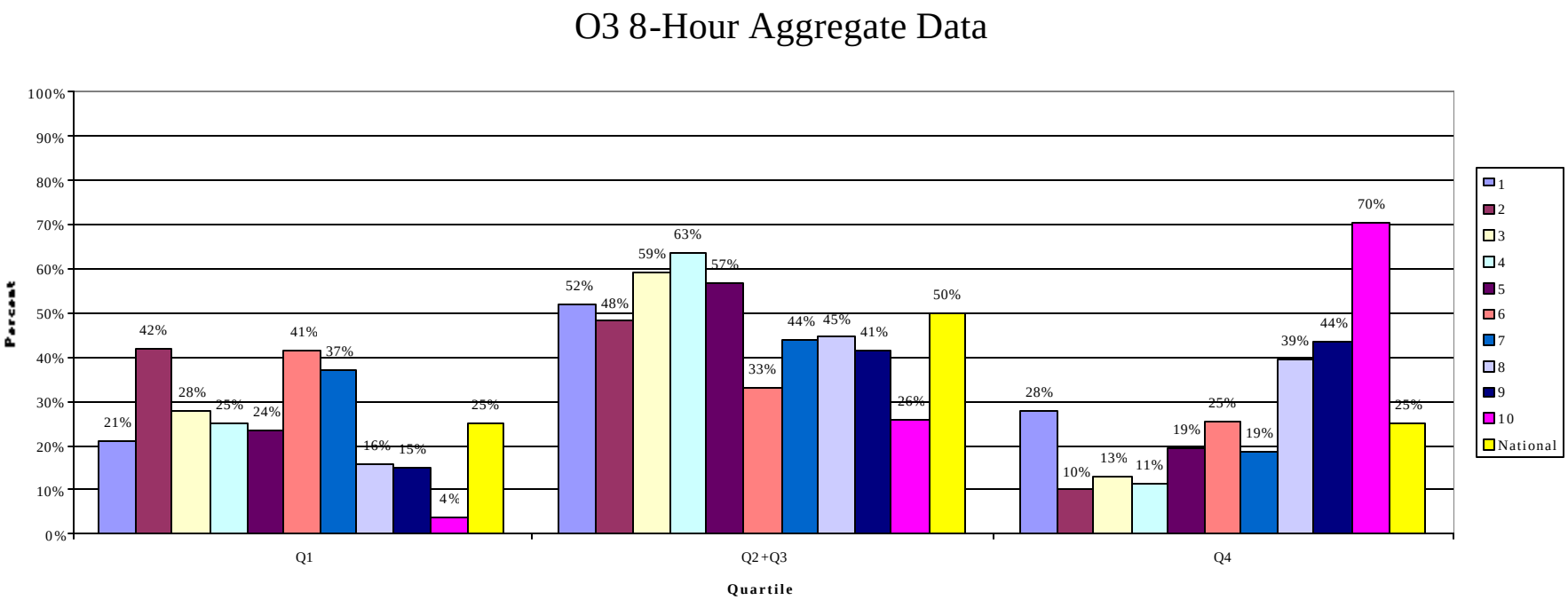
O3 8-Hour Area



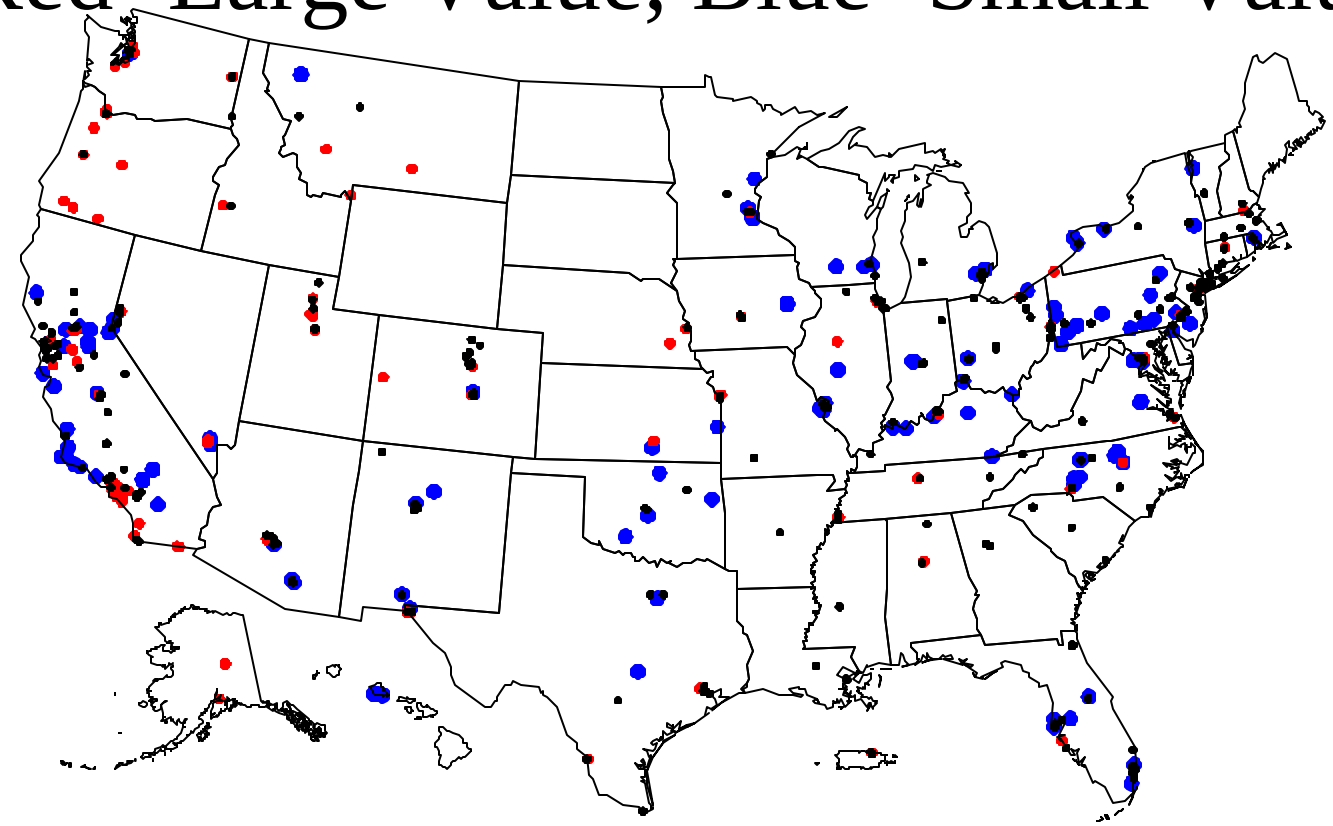
O3 8-Hour Population



Regional Percent of Sites in National Quartiles

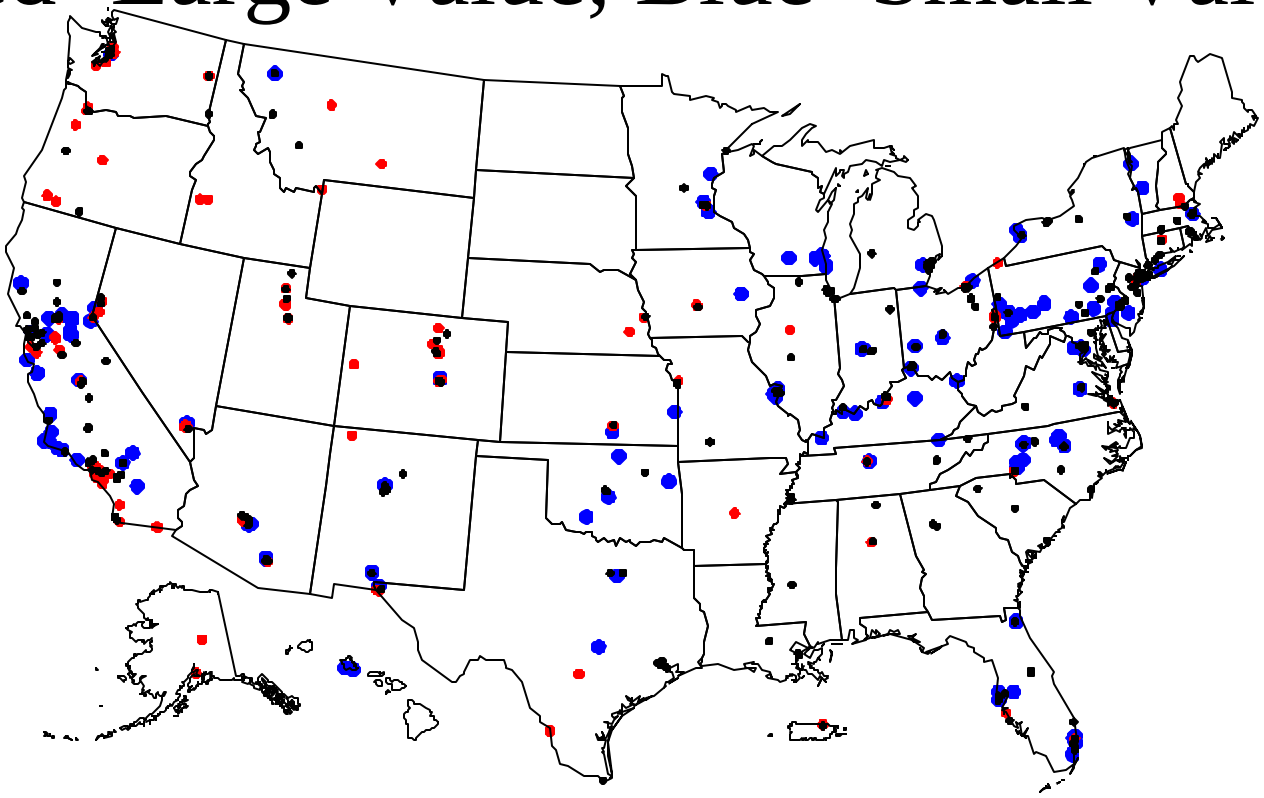


8-Hour CO 2nd Max: Red=Large Value, Blue=Small Value



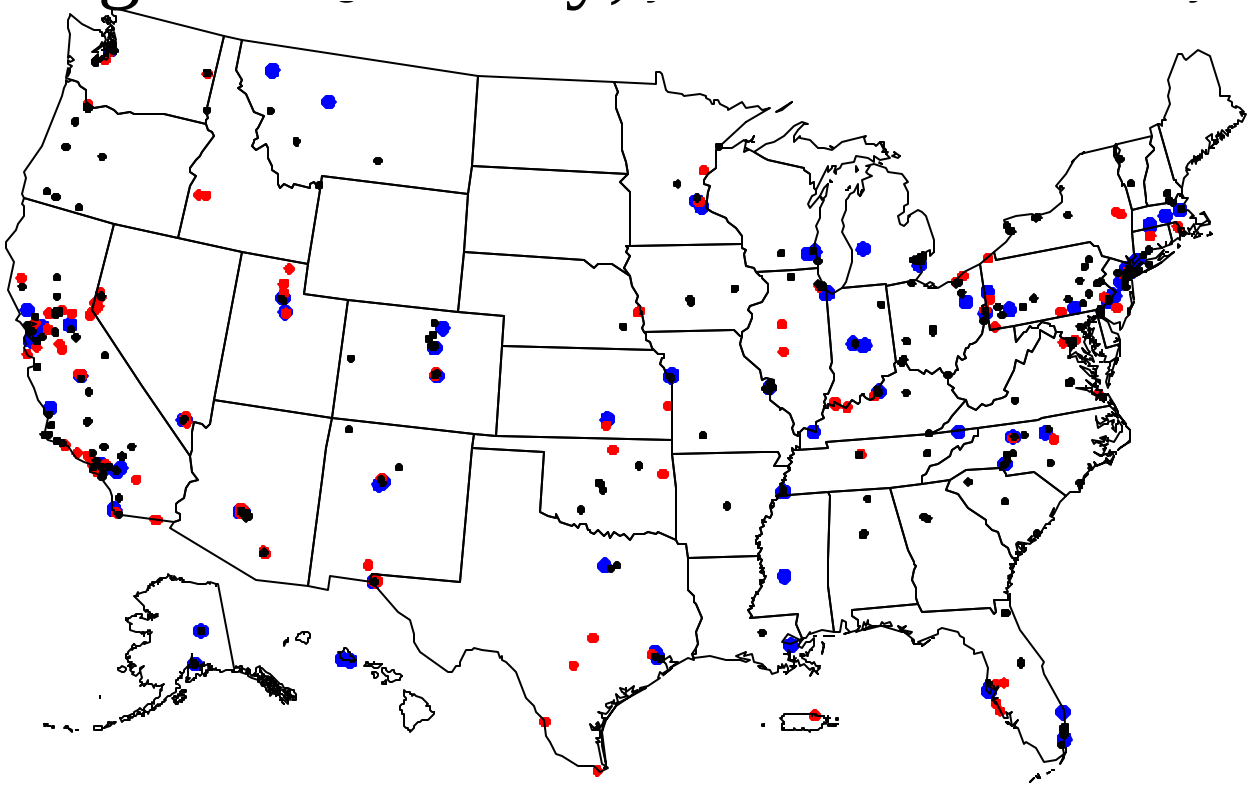
8-Hour CO 2nd Max: Red=Large Value, Blue=Small Value

1-Hour CO 2nd Max: Red=Large Value, Blue=Small Value



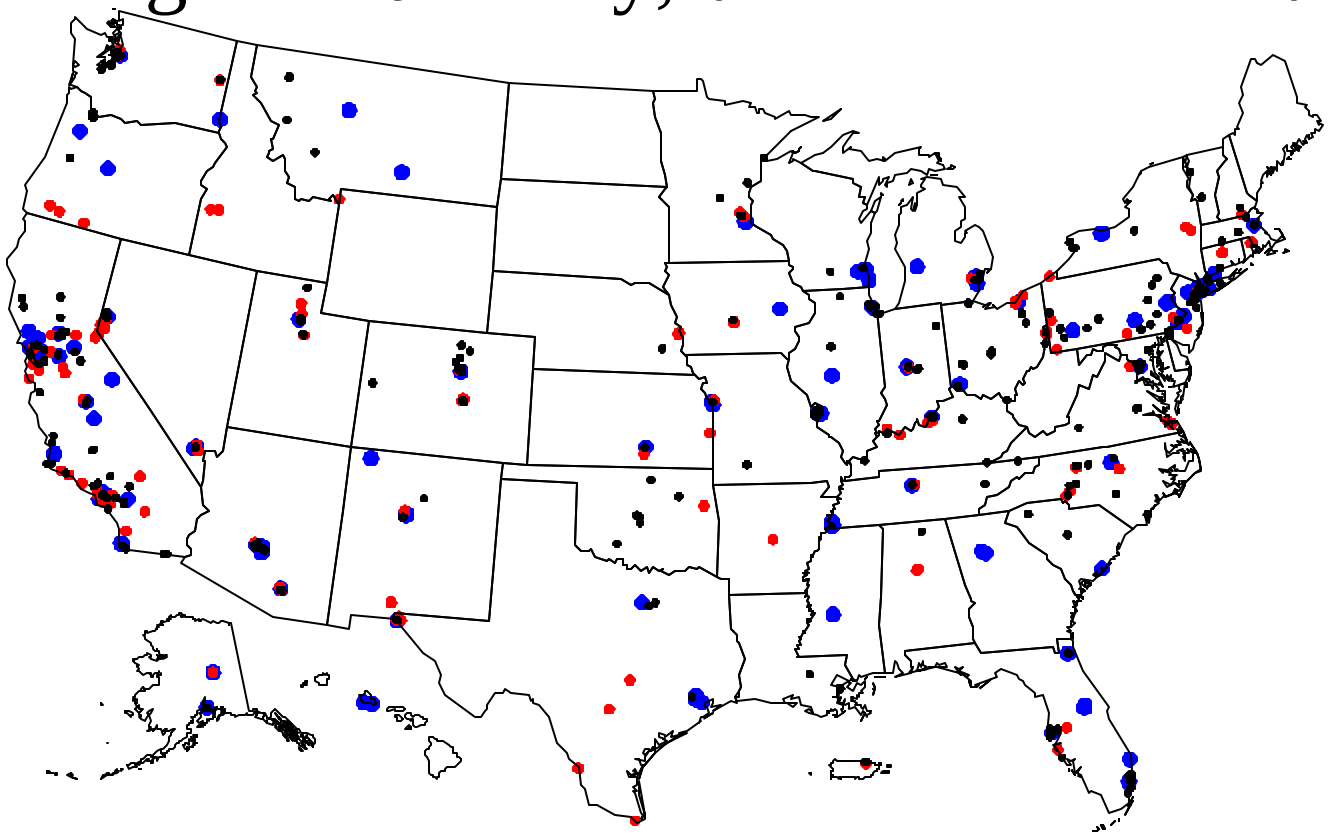
1-Hour CO 2nd Max: Red=Large Value, Blue=Small Value

Predicting 8-Hour CO 2nd Max: Red=High Uncertainty, Blue=Low Uncertainty



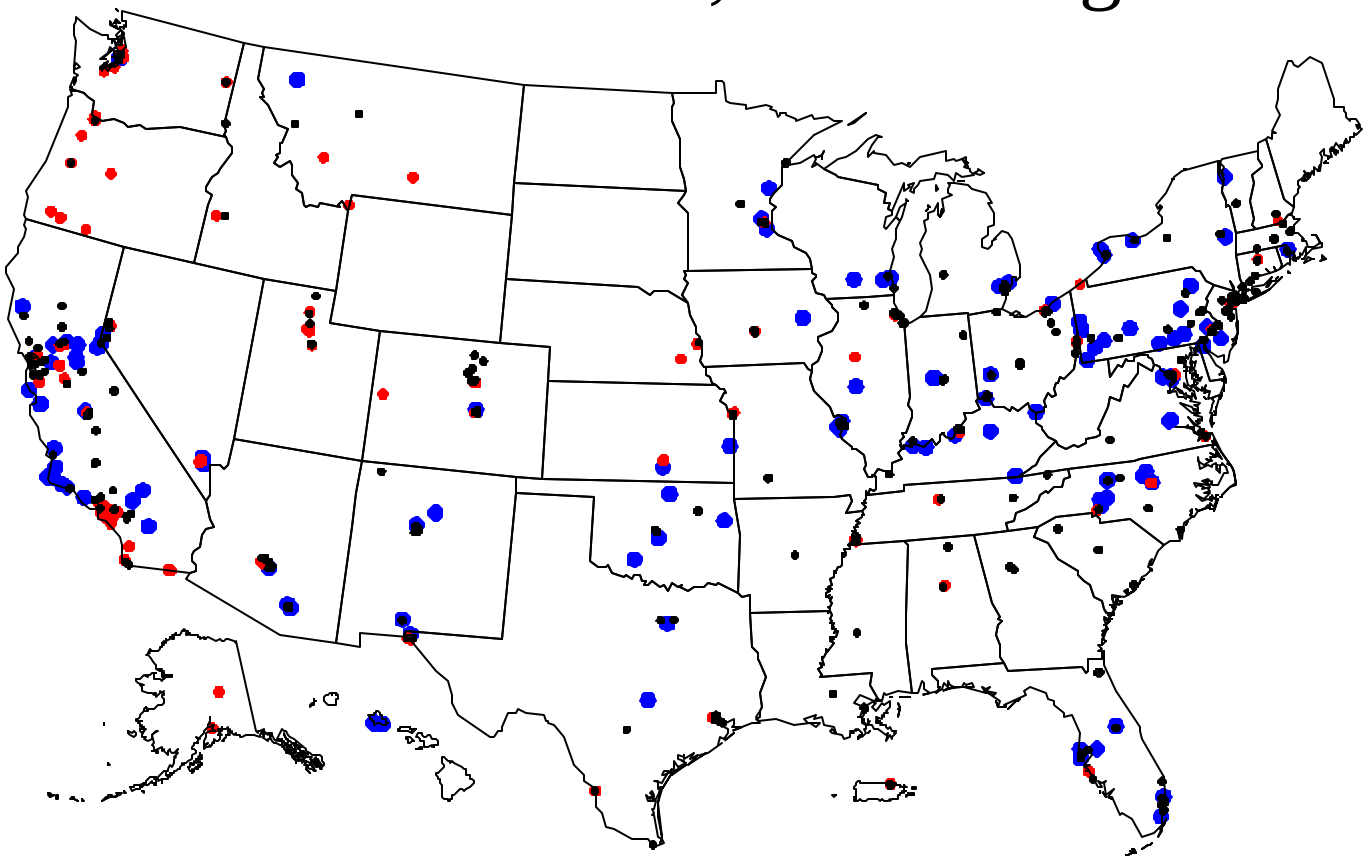
Predicting 8-Hour CO 2nd Max: Red=High Uncertainty, Blue=Low Uncertainty

Predicting 1-Hour CO 2nd Max: Red=High Uncertainty, Blue=Low Uncertainty



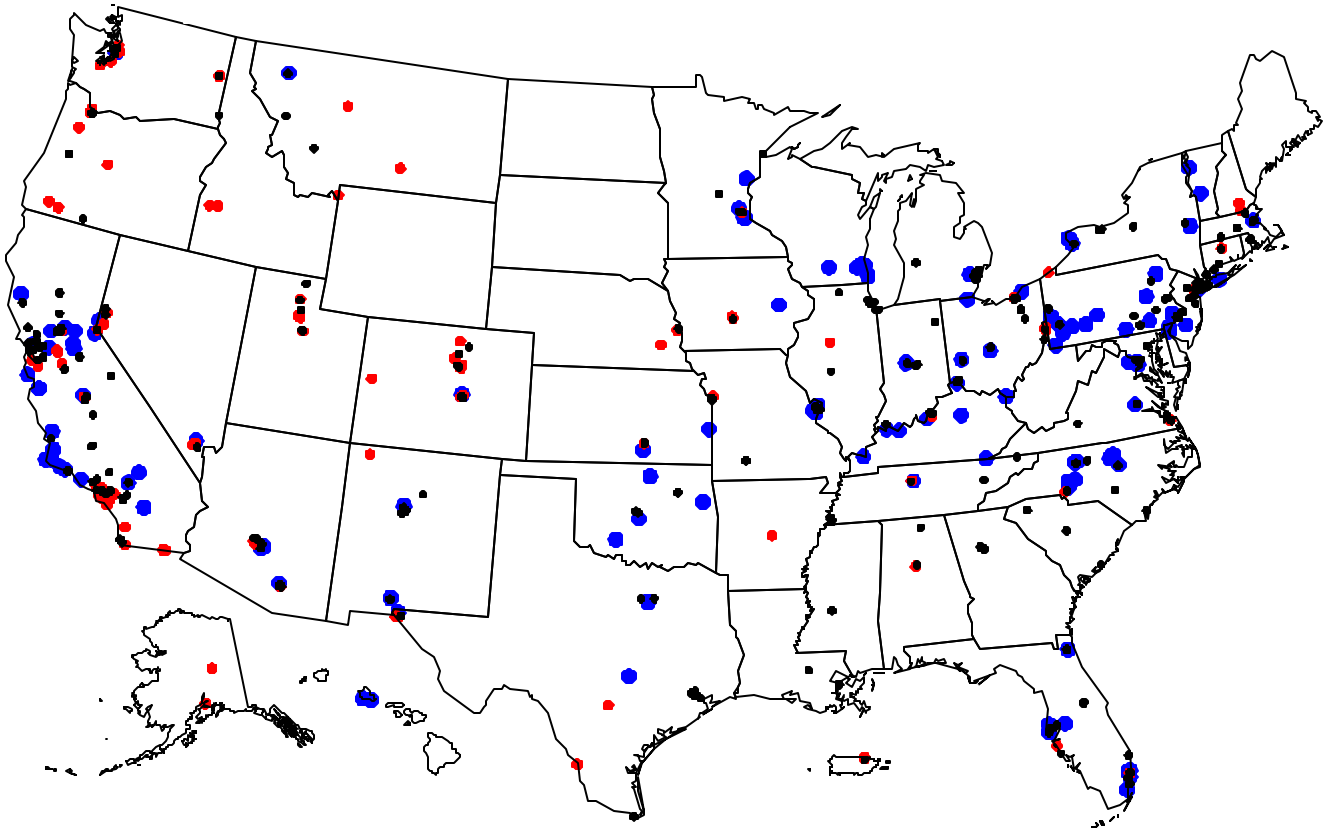
Predicting 1-Hour CO 2nd Max: Red=High Uncertainty, Blue=Low Uncertainty

Deviation from 8-Hour CO NAAQS: Red=Small Deviation, Blue=Large Deviation



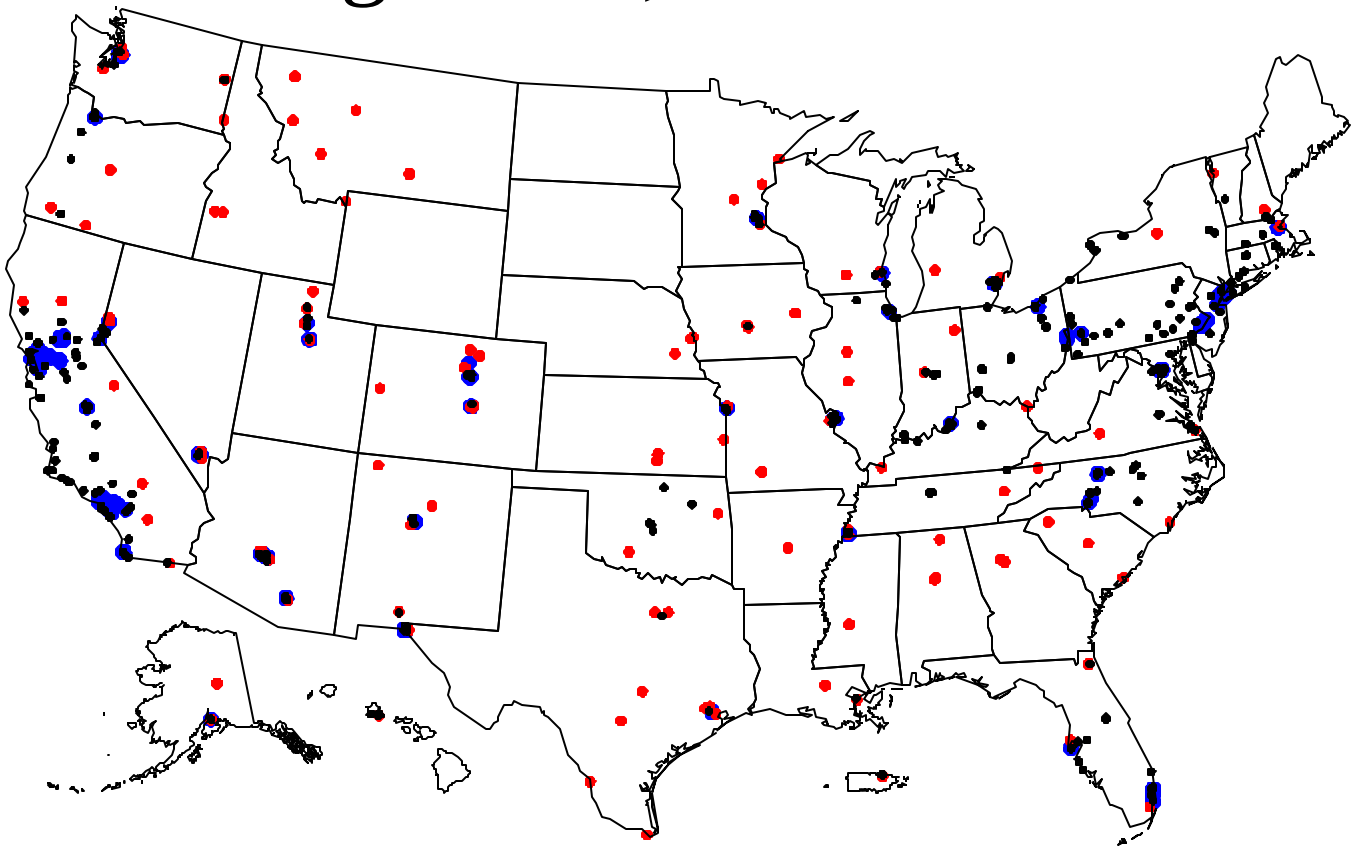
Deviation from 8-Hour CO NAAQS: Red=Small Deviation, Blue=Large Deviation

Deviation from 1-Hour CO NAAQS: Red=Small Deviation, Blue=Large Deviation



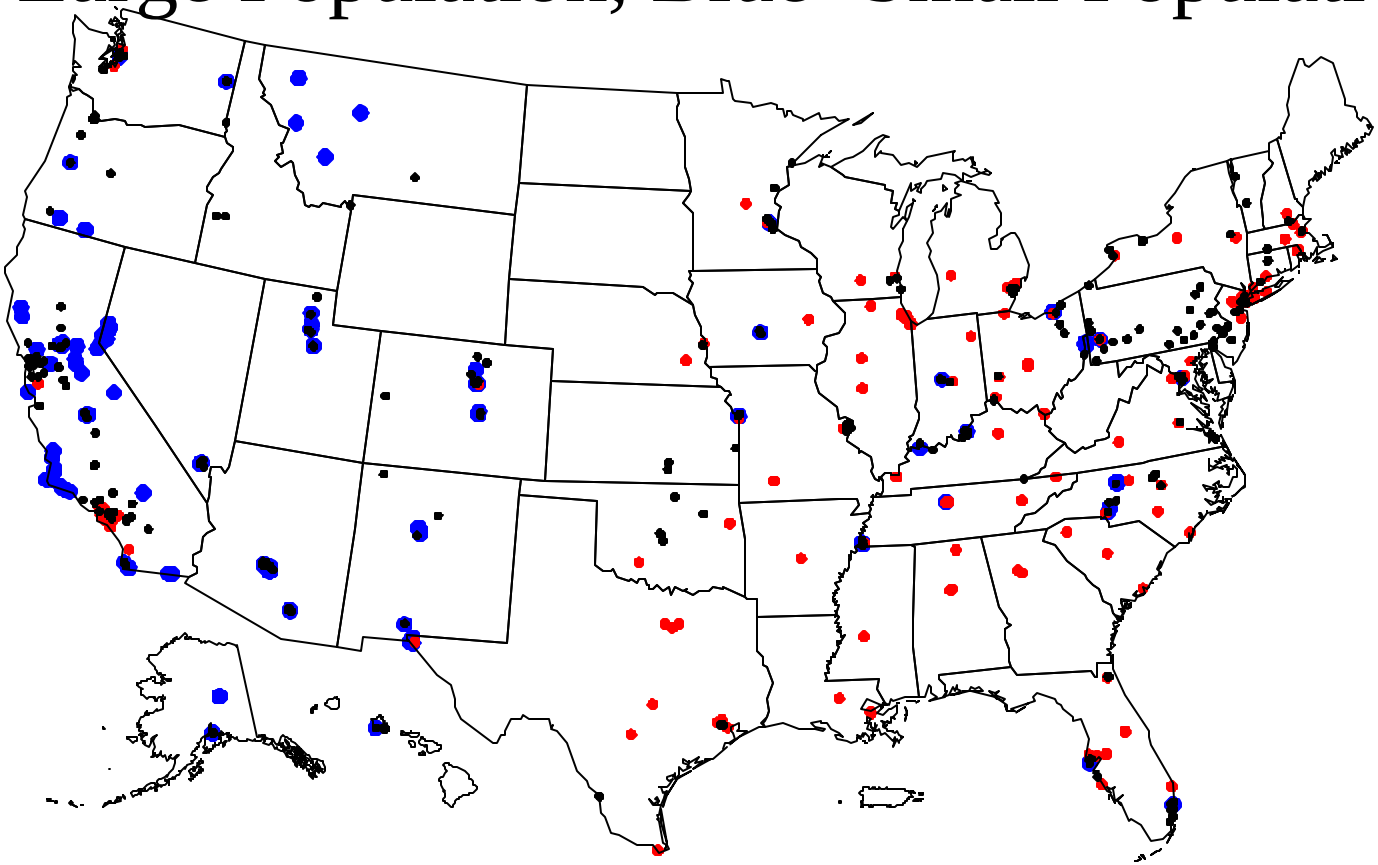
Deviation from 1-Hour CO NAAQS: Red=Small Deviation, Blue=Large Deviation

Area for CO Monitors: Red=Large Area, Blue=Small Area



Area for CO Monitors: Red=Large Area, Blue=Small Area

Population for CO Monitors: Red=Large Population, Blue=Small Population



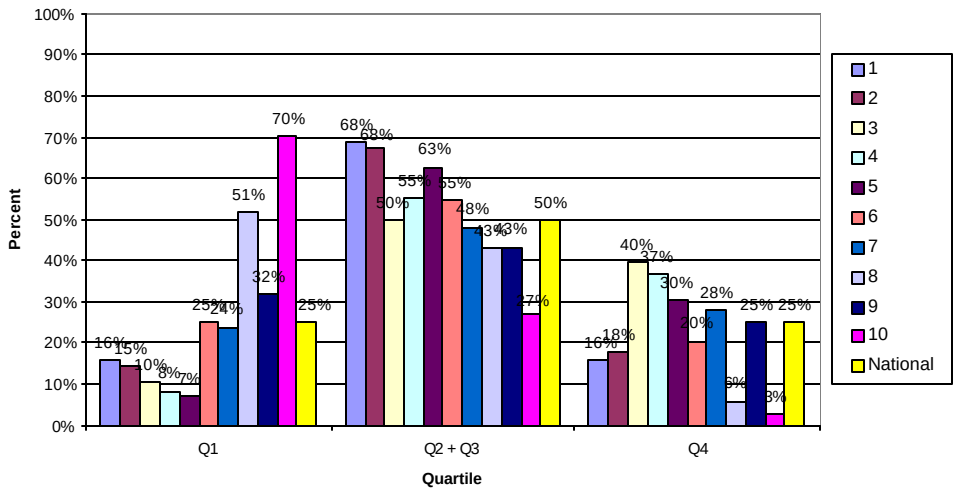
Population for CO Monitors: Red=Large Population, Blue=Small Population

CO Quartiles

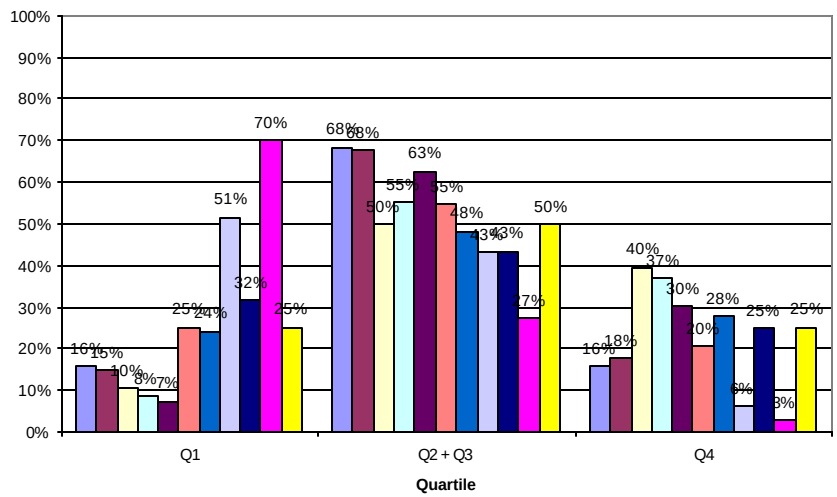
	CO									
	co1hr2x	% of NAAQS	co8hr2x	% of NAAQS	co1hrerr	co8hrerr	dif_NAAQS_8hr	dif_NAAQS_1hr	area	population
Q1	7.1	20.3%	4.4	48.9%	2.5	1.5	4.6	27.9	21400	787498
Q3	4	11.4%	2.4	26.7%	0.7	0.3	6.6	31	1420	179997

Regional Percent of Sites in National Quartiles

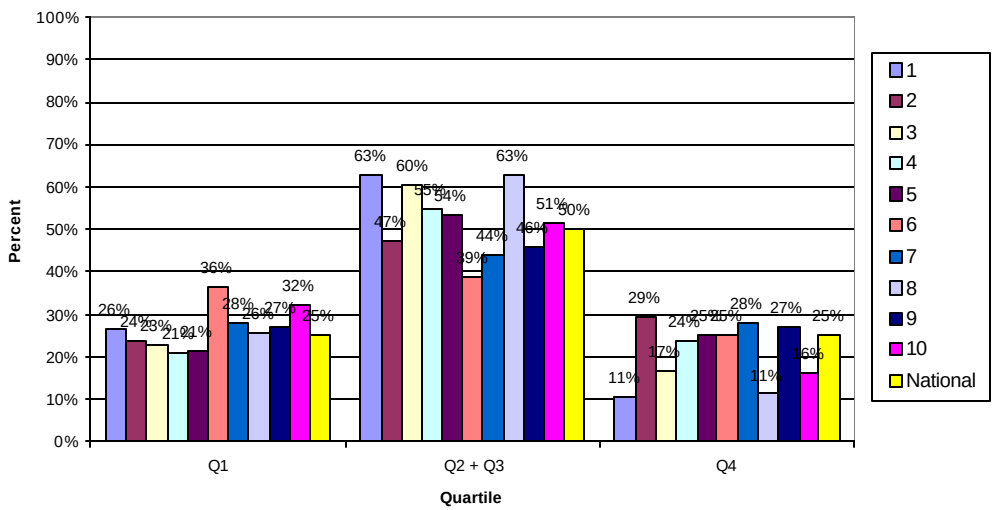
CO 1-Hour Concentration



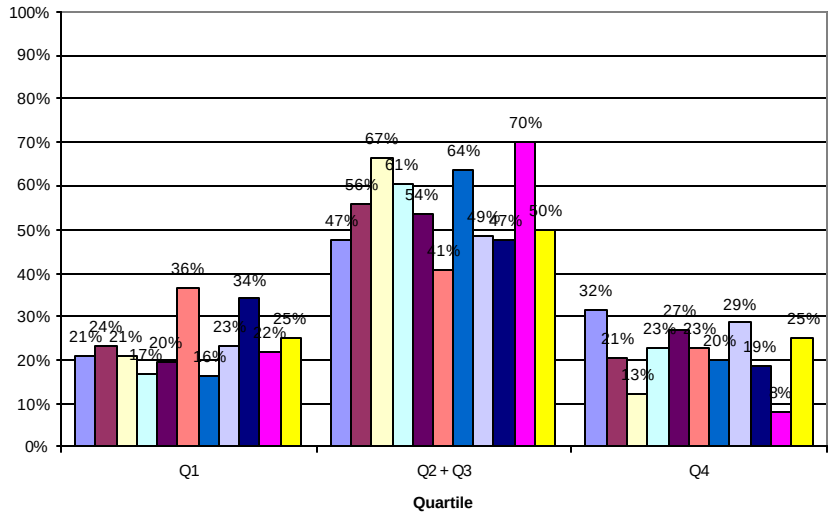
CO 8-Hour Concentration



CO 1-Hour Uncertainty

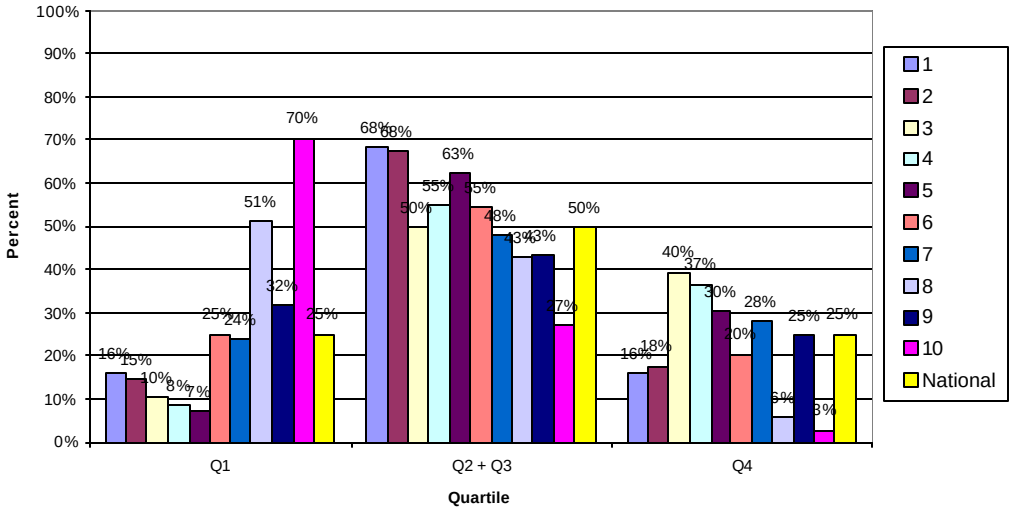


CO 1-Hour Uncertainty

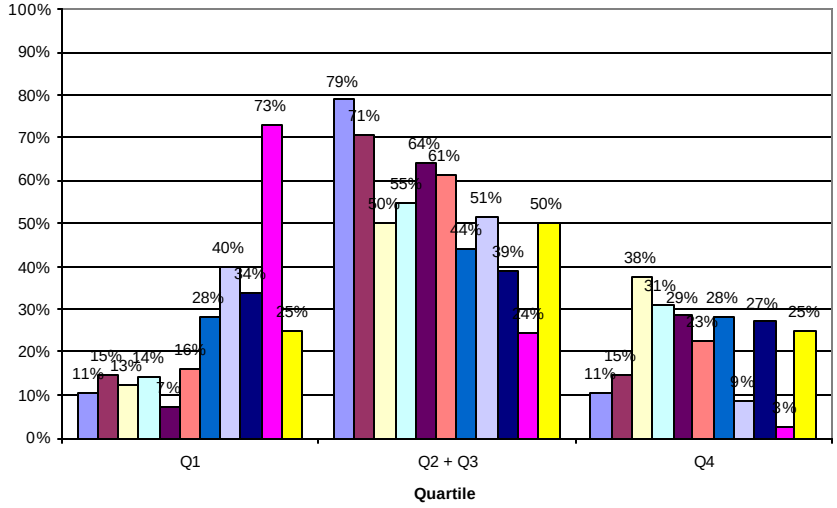


Regional Percent of Sites in National Quartiles

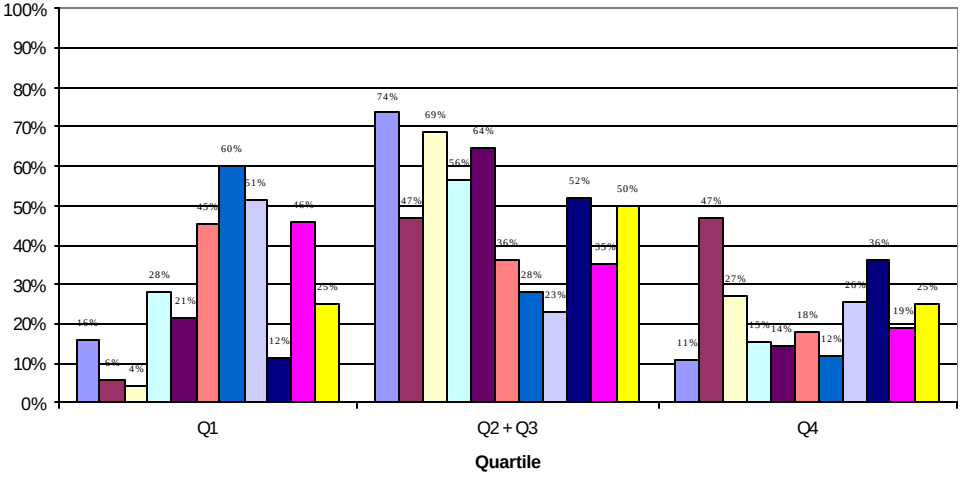
CO 1-Hour Deviation from NAAQS



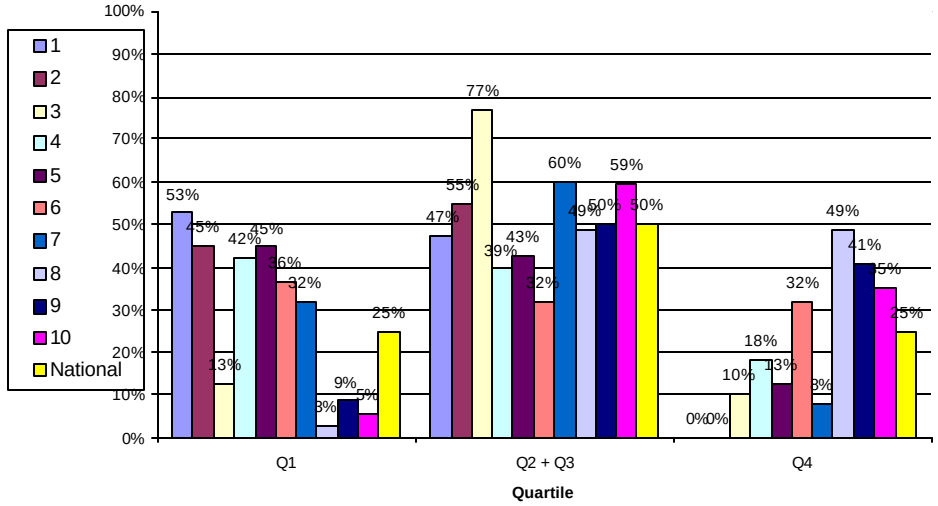
CO 8-Hour Deviation from NAAQS



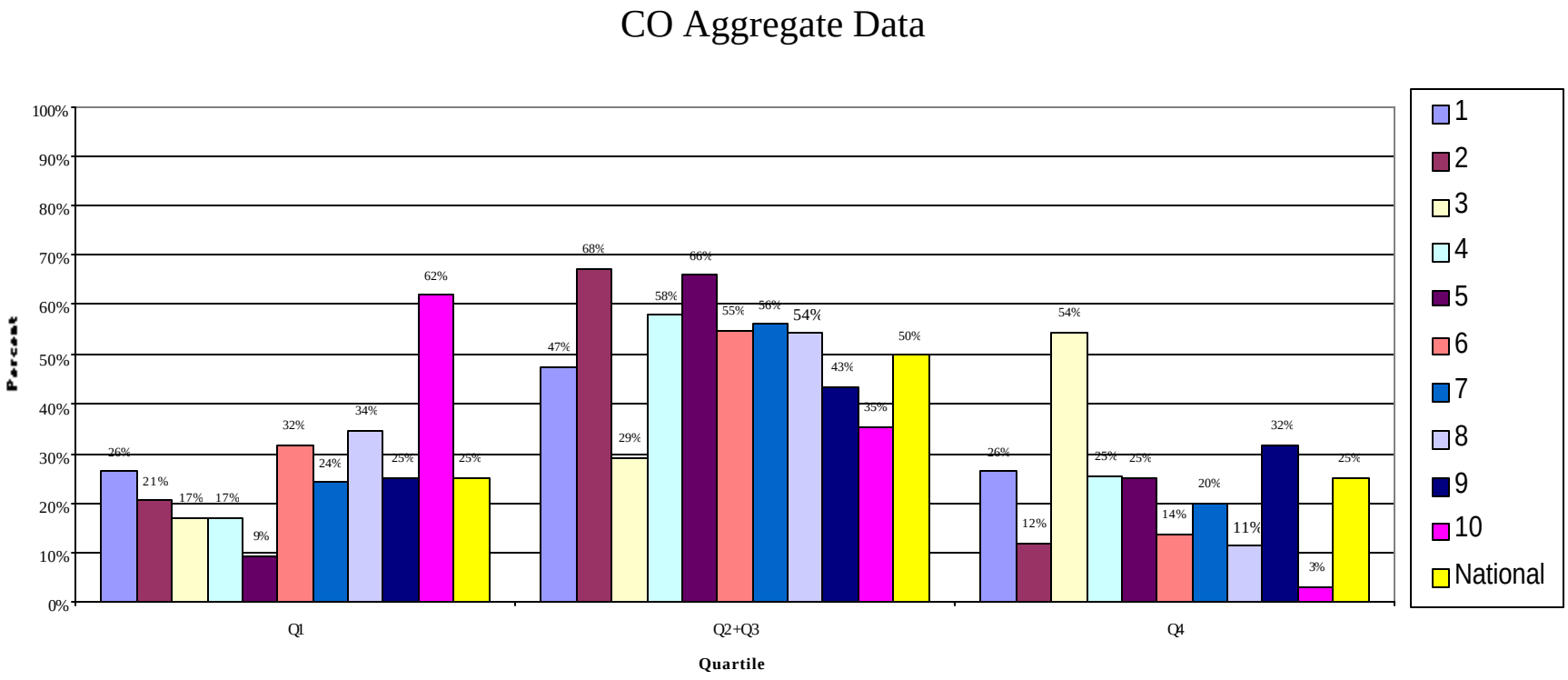
CO Area



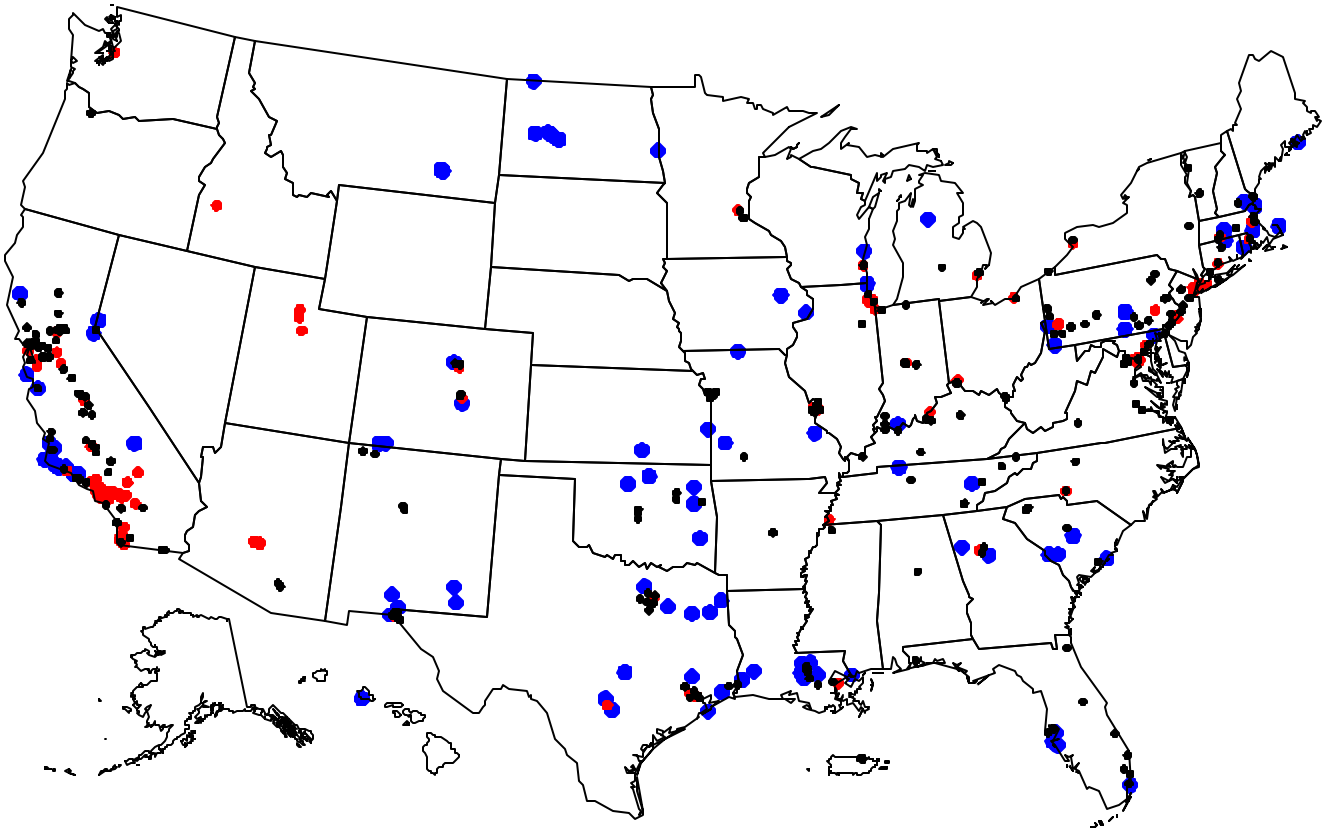
CO Population



Regional Percent of Sites in National Quartiles

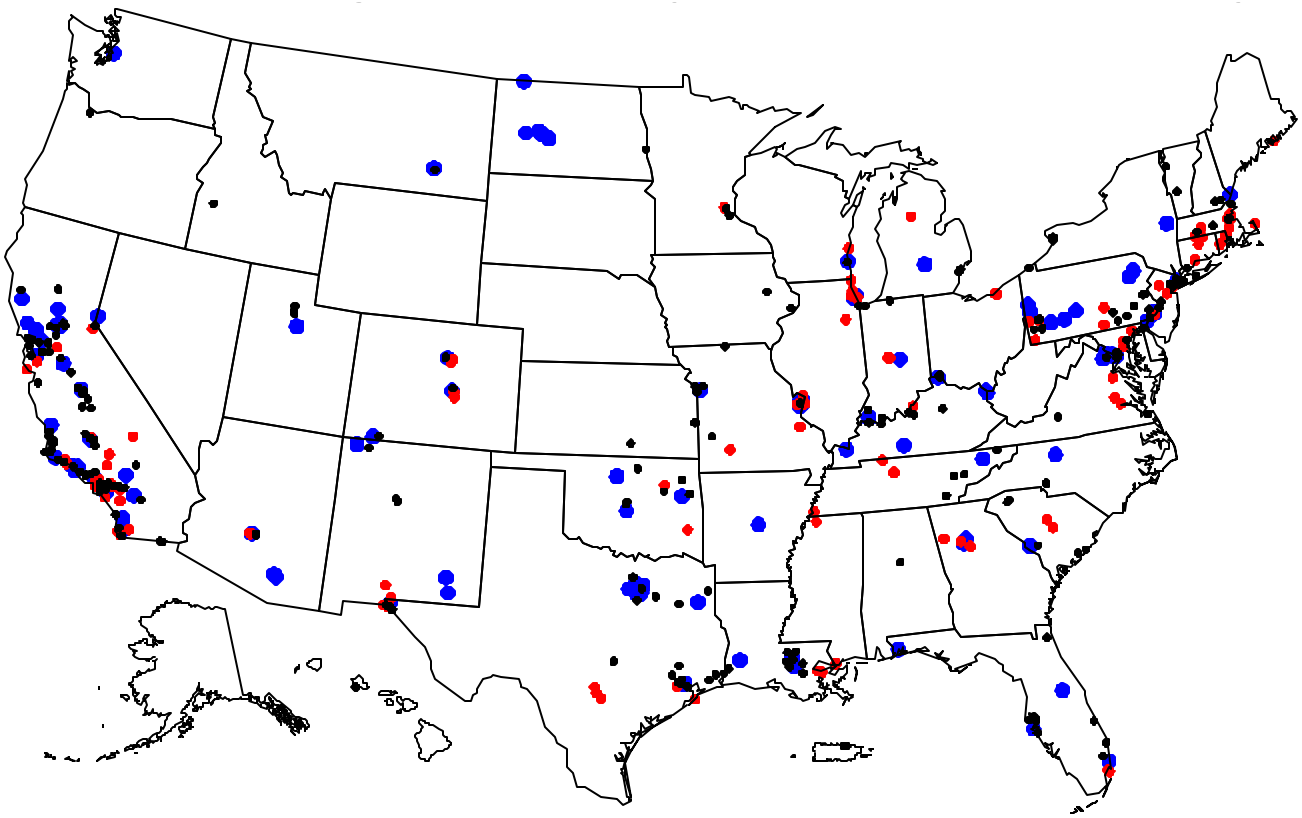


NO2 Annual Mean:
Red=Large Value, Blue=Small Value



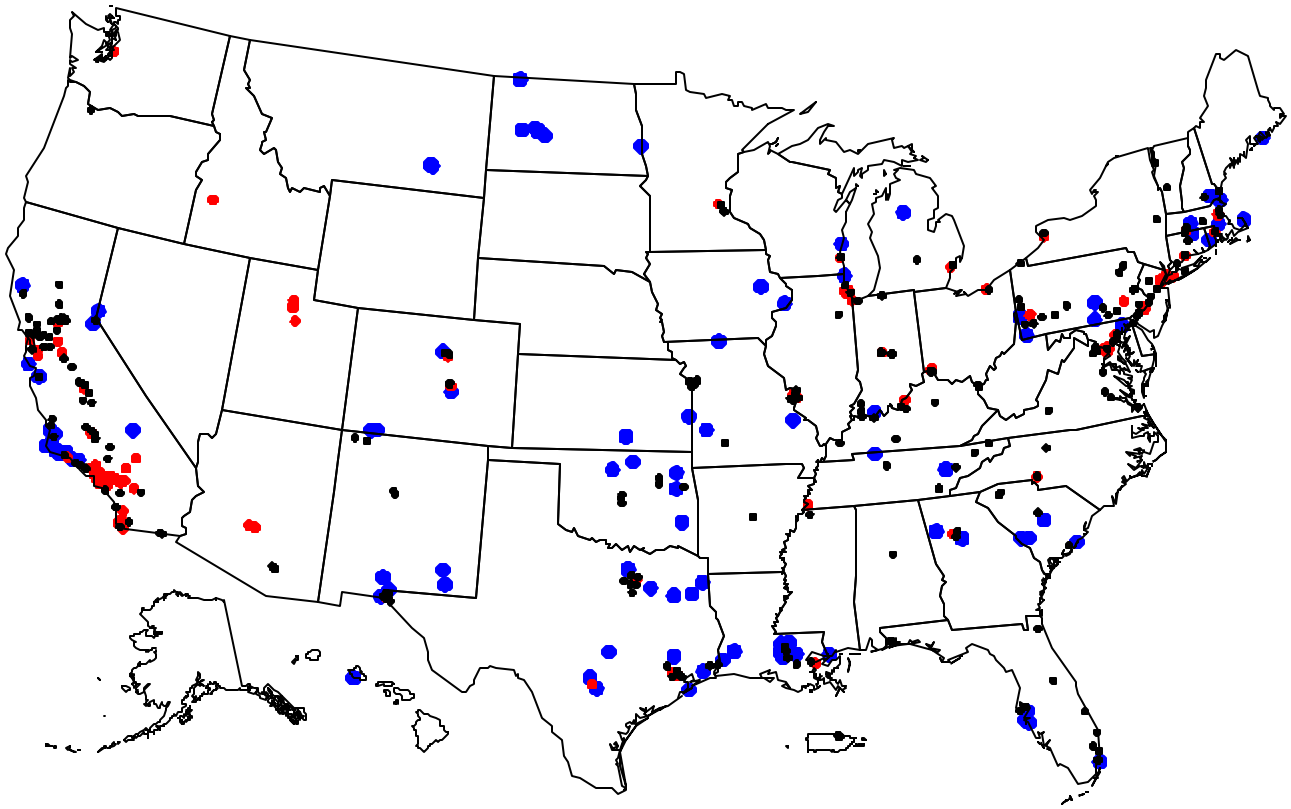
NO2 Annual Mean: Red=Large Value, Blue=Small Value

Predicting NO2 Annual Mean: Red=High Uncertainty, Blue=Low Uncertainty



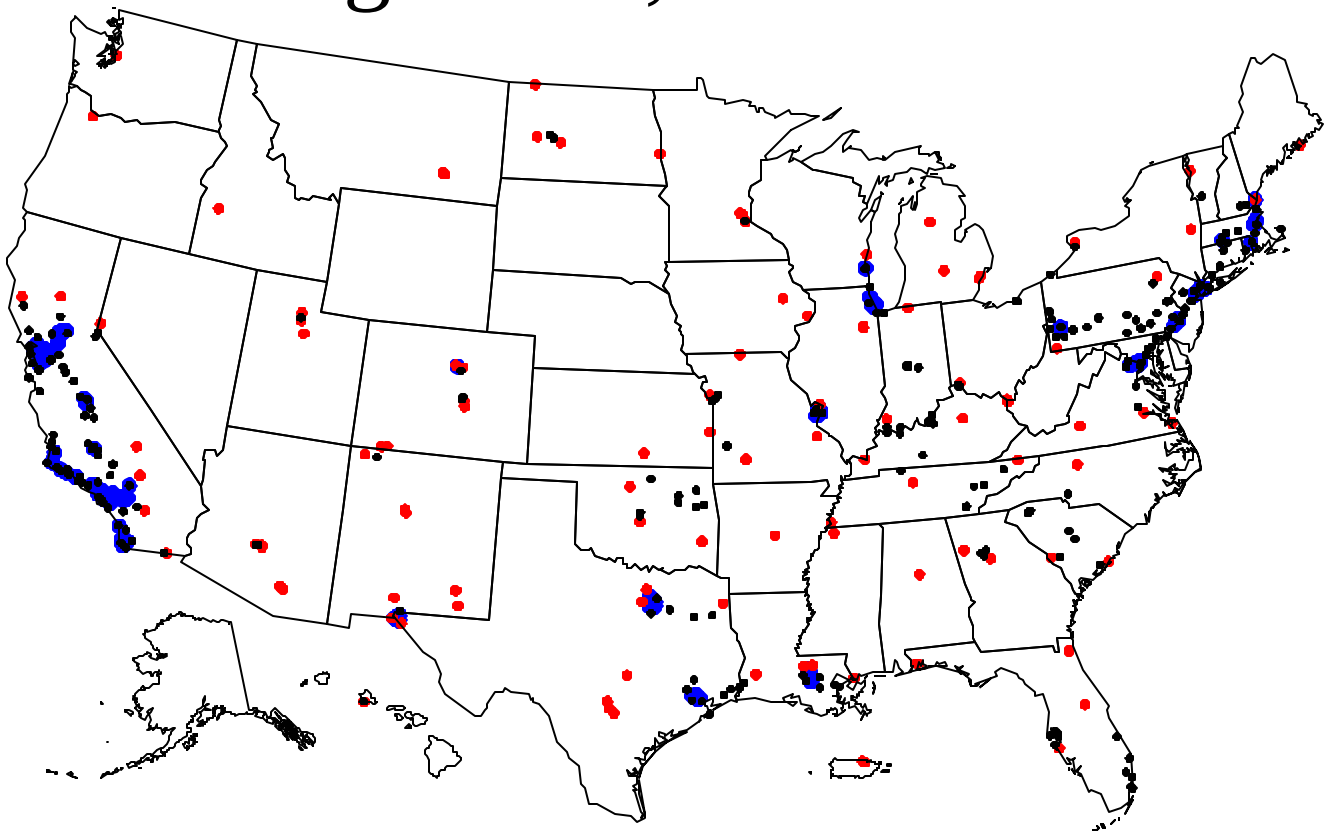
Predicting NO2 Annual Mean: Red=High Uncertainty, Blue=Low Uncertainty

Deviation from NO2 Annual Mean NAAQS: Red=Small Deviation, Blue=Large Deviation



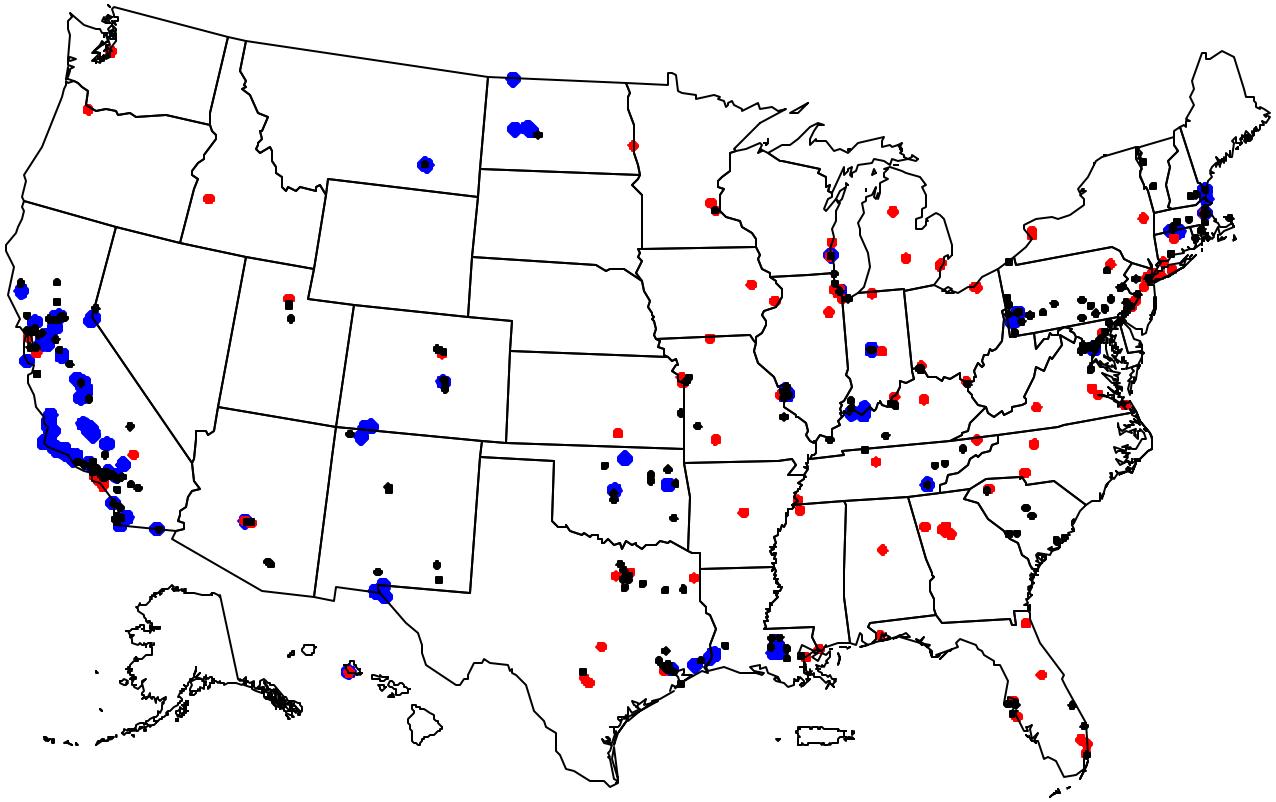
Deviation from NO2 Annual Mean NAAQS: Red=Small Deviation, Blue=Large Deviation

Area for NO2 Monitors: Red=Large Area, Blue=Small Area



Area for NO2 Monitors: Red=Large Area, Blue=Small Area

Population for NO2 Monitors: Red=Large Population, Blue=Small Population



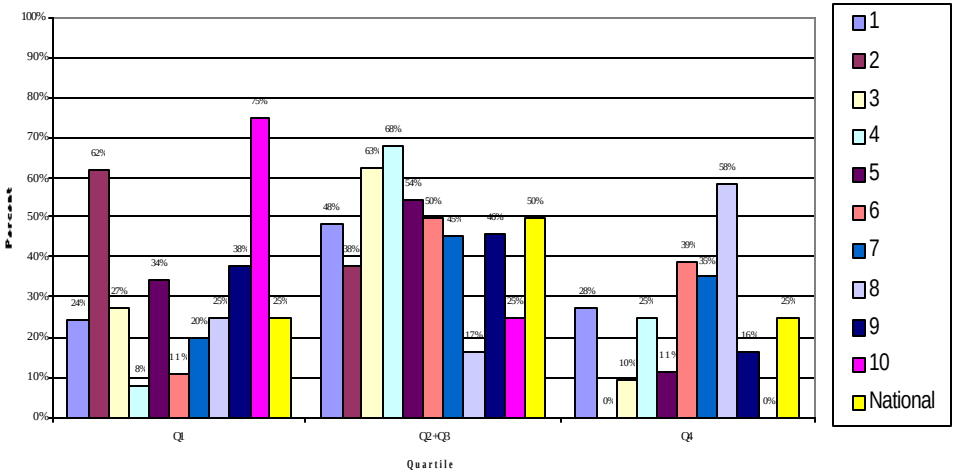
Population for NO2 Monitors: Red=Large Population, Blue=Small Population

NO2 Quartiles

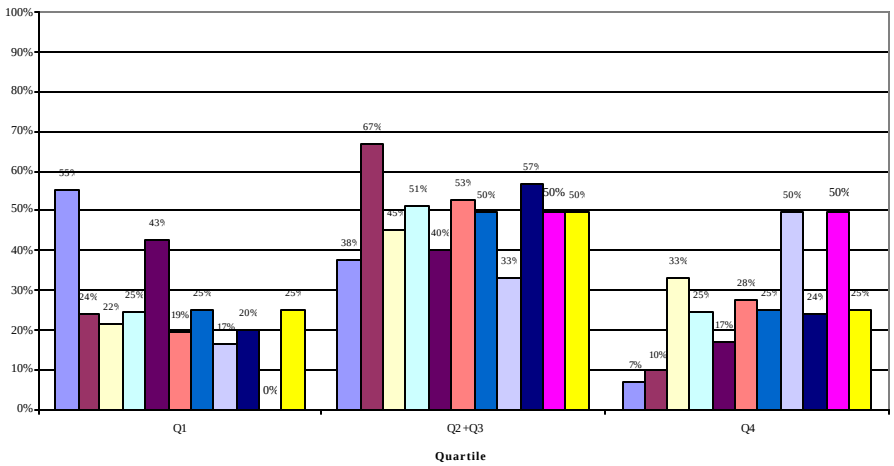
	NO2					
	no2mean	% of NAAQS	no2err	dif_NAAQS	area	population
Q1	0.02	37.7%	0.0064	0.033	21257.4	836878
Q3	0.009	17.0%	0.0017	0.044	1516.846	197759

Regional Percent of Sites in National Quartiles

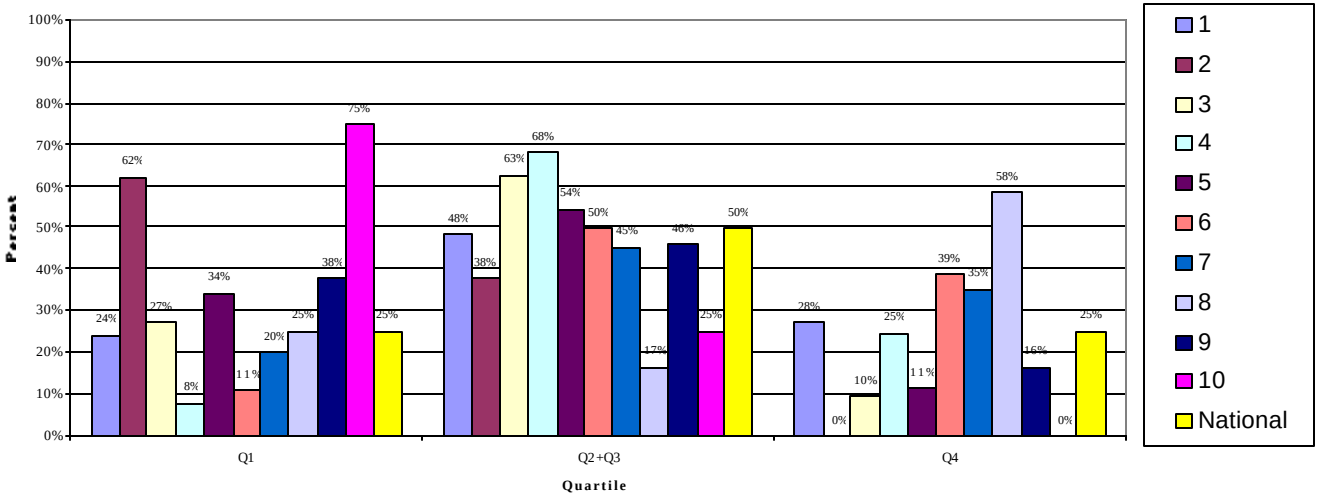
NO2 Annual Mean Concentration



NO2 Uncertainty

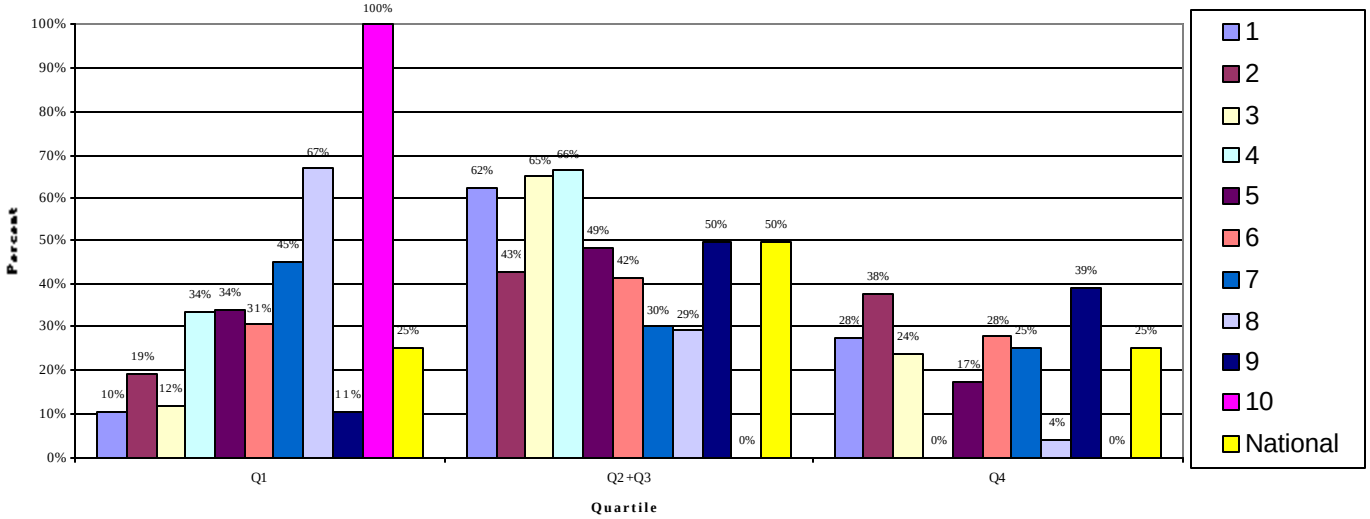


NO2 Deviation from NAAQS

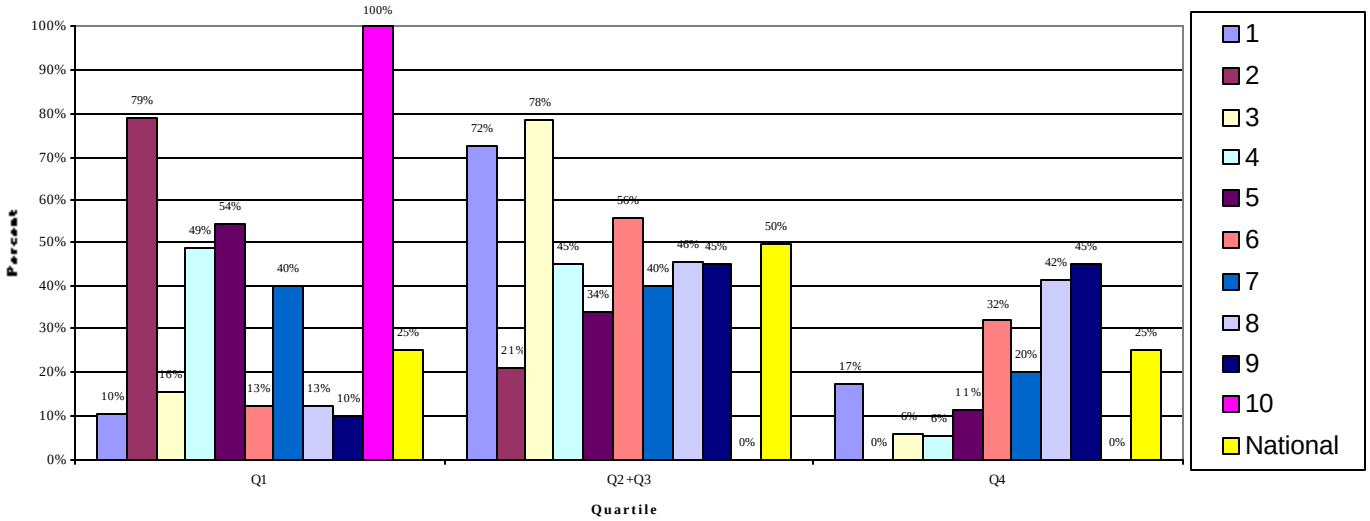


Regional Percent of Sites in National Quartiles

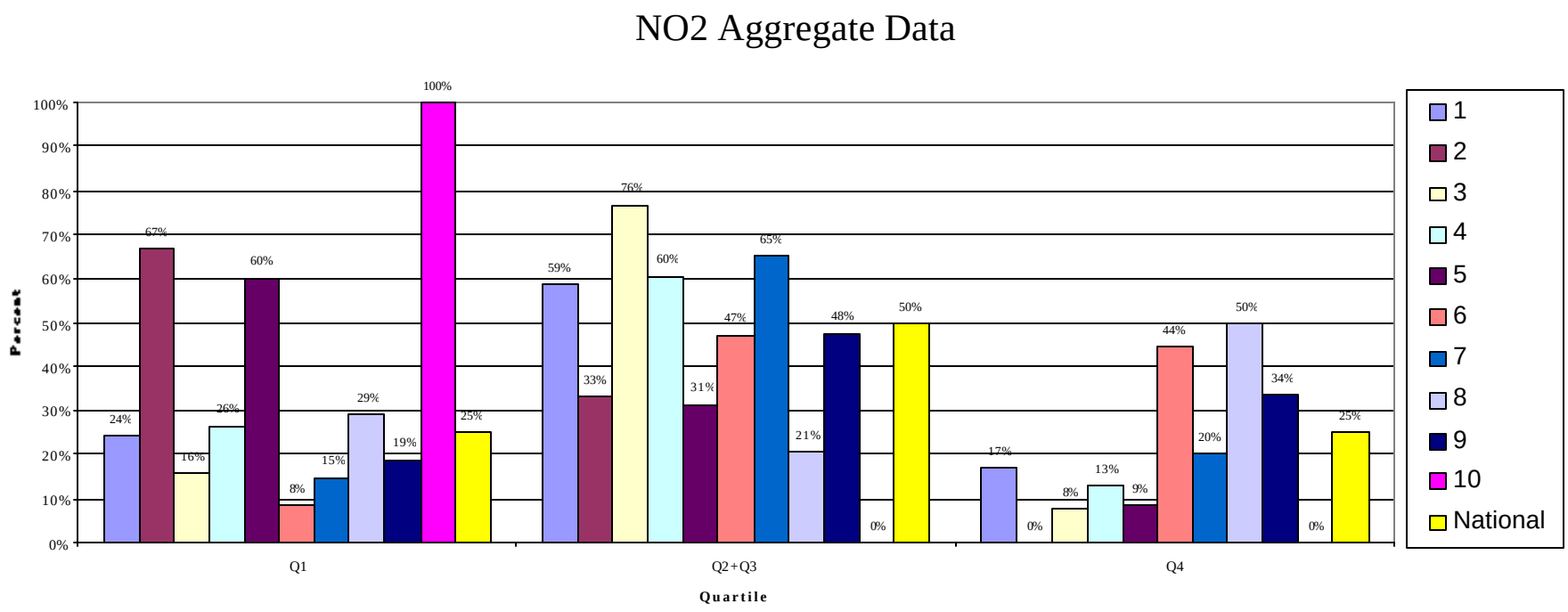
NO2 Area



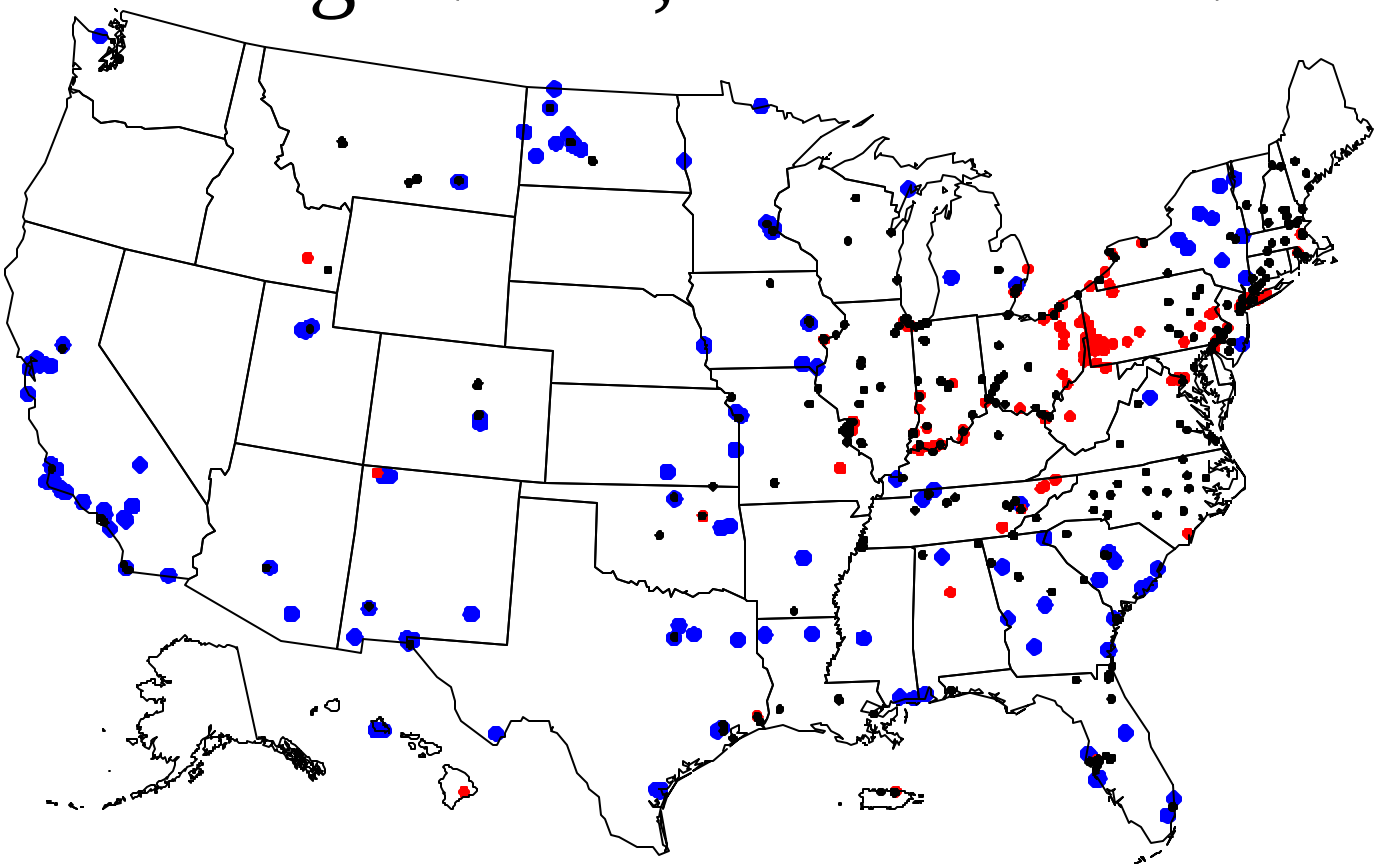
NO2 Population



Regional Percent of Sites in National Quartiles

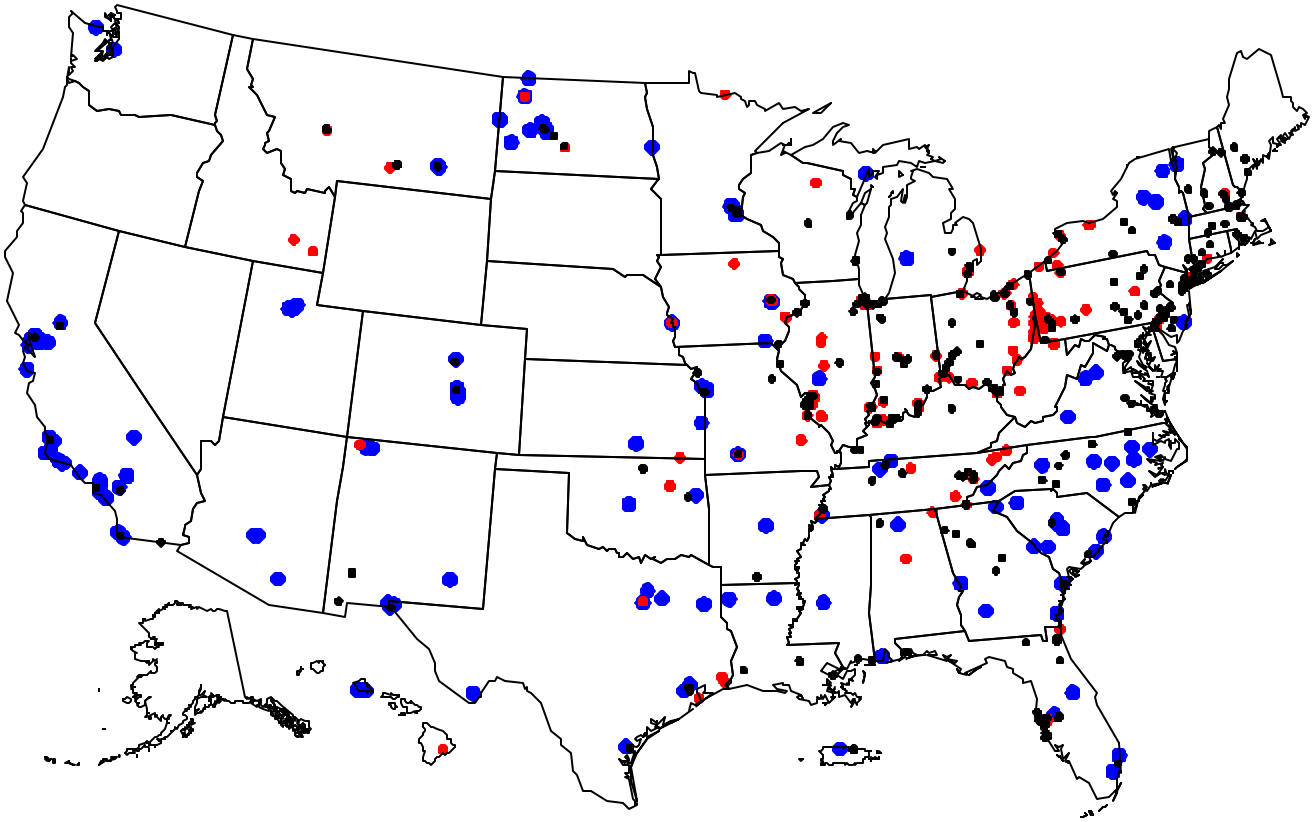


SO2 Annual Mean:
Red=Large Value, Blue=Small Value



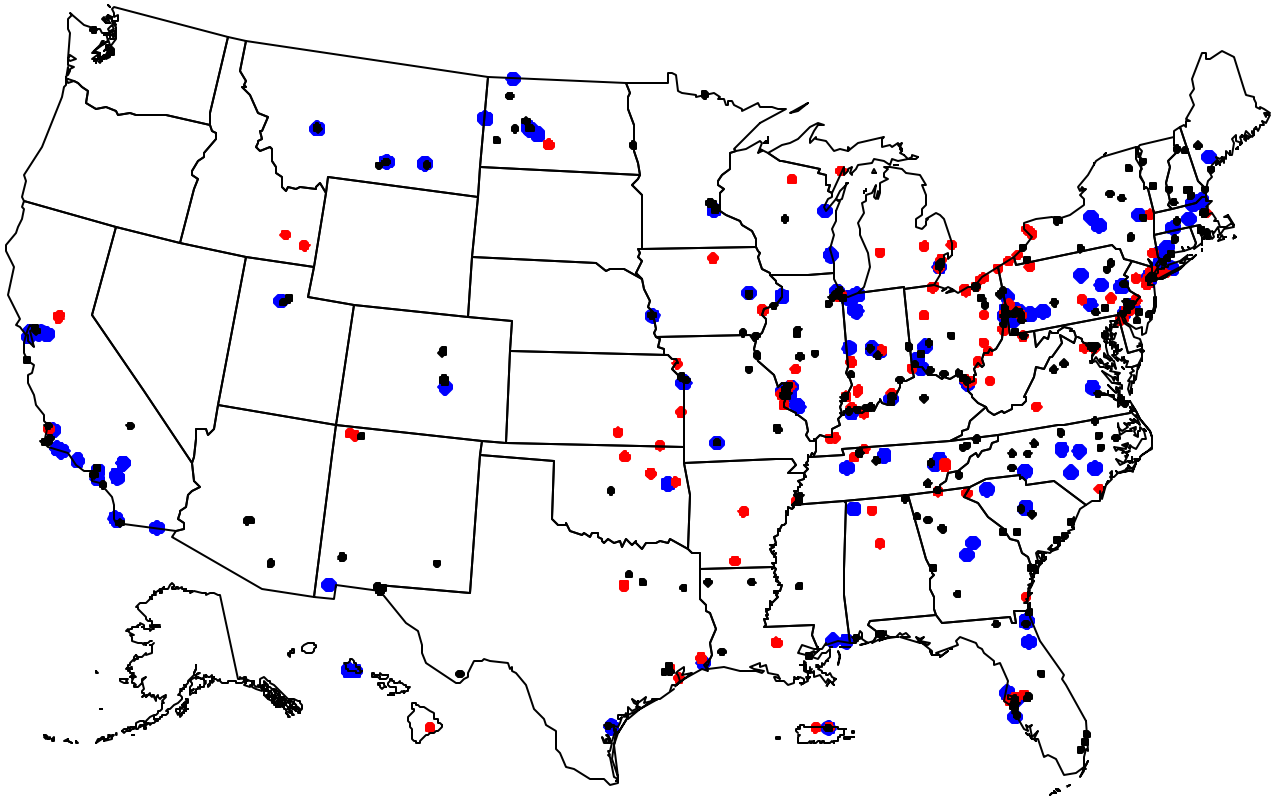
SO2 Annual Mean: Red=Large Value, Blue=Small Value

SO2 2nd Max:
Red=Large Value, Blue=Small Value



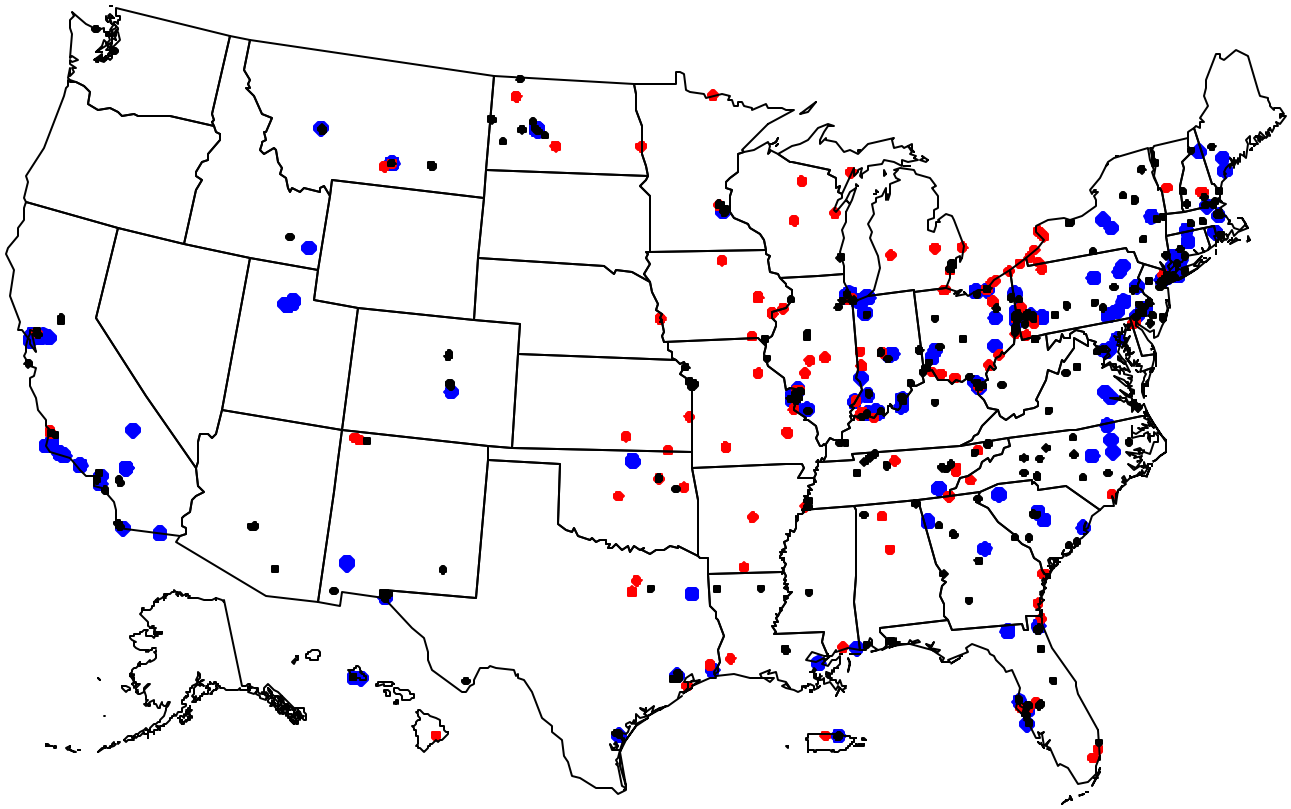
SO2 2nd Max: Red=Large Value, Blue=Small Value

Predicting SO2 Annual Mean: Red=High Uncertainty, Blue=Low Uncertainty



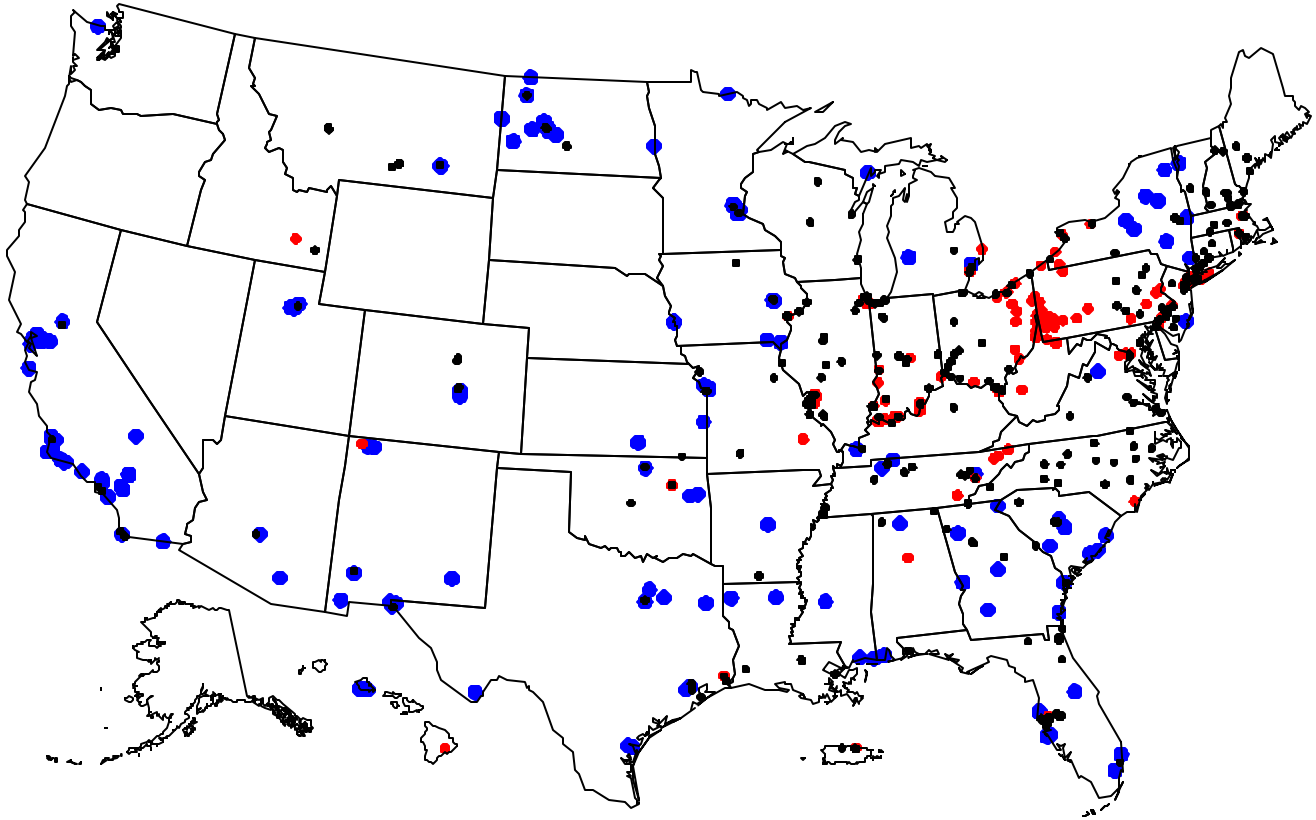
Predicting SO2 Annual Mean: Red=High Uncertainty, Blue=Low Uncertainty

Predicting SO2 2nd Max: Red=High Uncertainty, Blue=Low Uncertainty



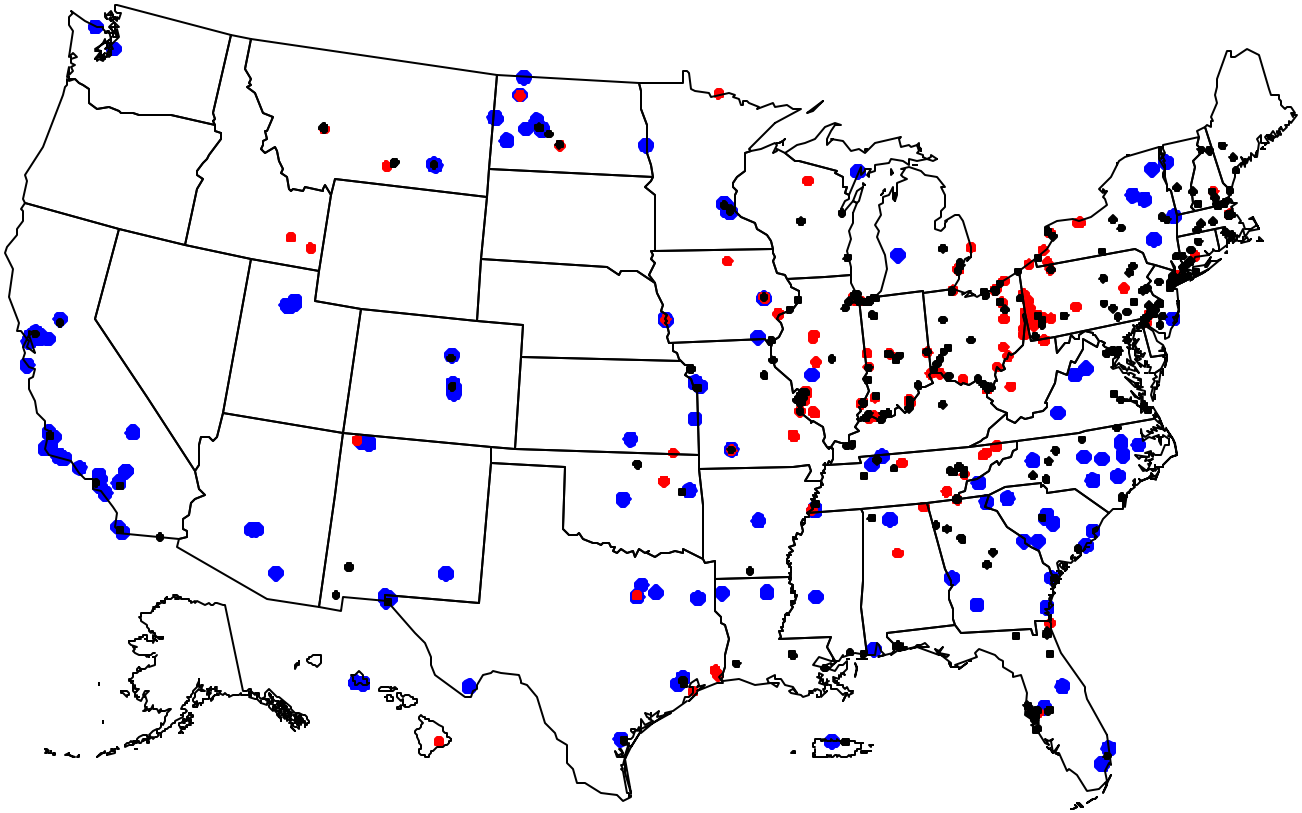
Predicting SO2 2nd Max: Red=High Uncertainty, Blue=Low Uncertainty

Deviation from SO2 Annual Mean NAAQS: Red=Small Deviation, Blue=Large Deviation



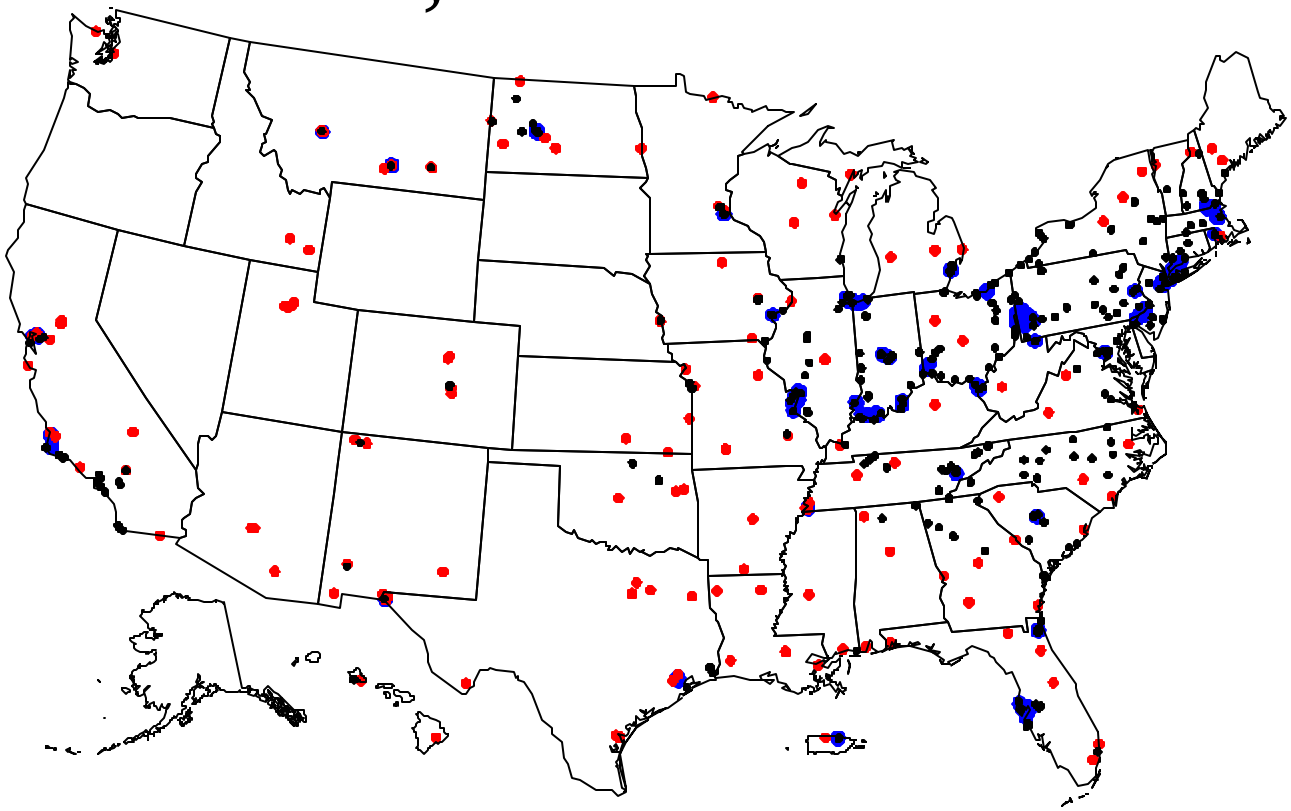
Deviation from SO2 Annual Mean NAAQS: Red=Small Deviation, Blue=Large Deviation

Deviation from SO2 24-Hour NAAQS: Red=Small Deviation, Blue=Large Deviation



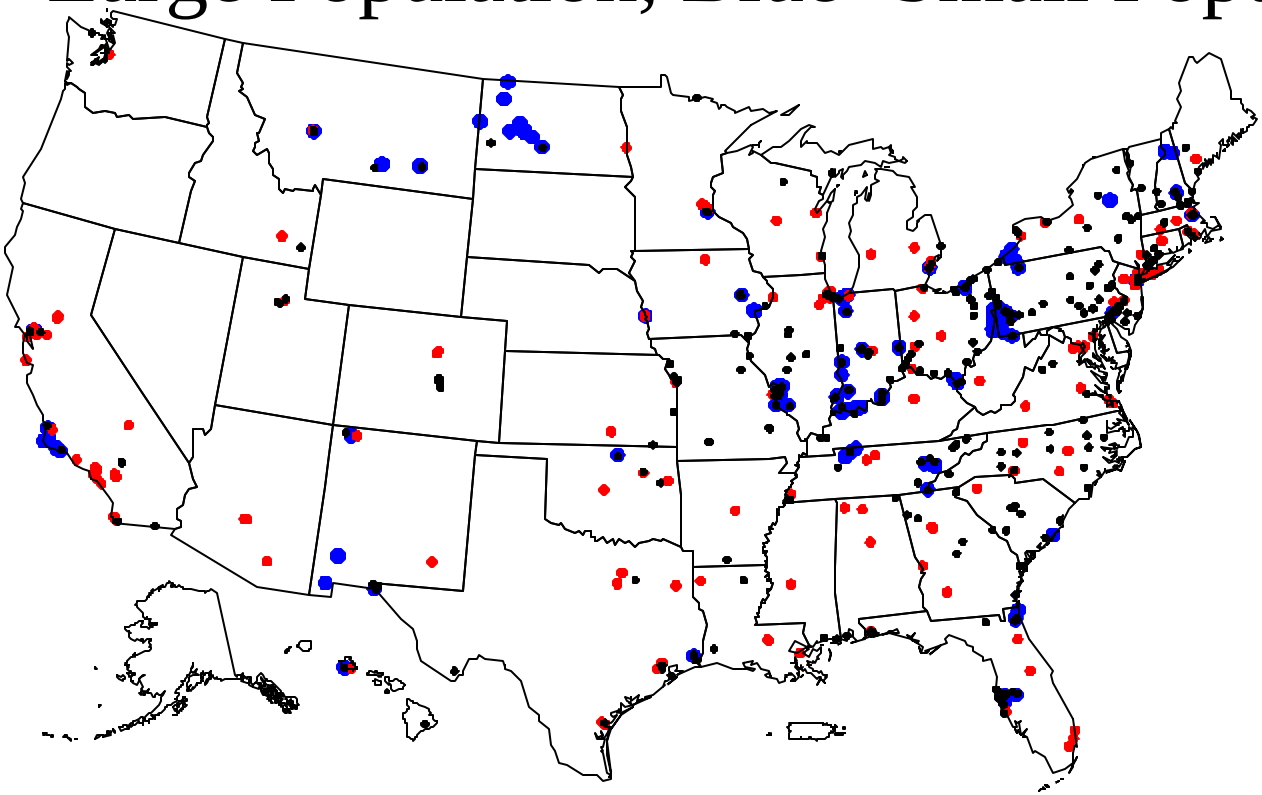
Deviation from SO2 24-Hour NAAQS: Red=Small Deviation, Blue=Large Deviation

Area for SO2 Monitors: Red=Large Area, Blue=Small Area



Area for SO2 Monitors: Red=Large Area, Blue=Small Area

Population for SO2 Monitors: Red=Large Population, Blue=Small Population



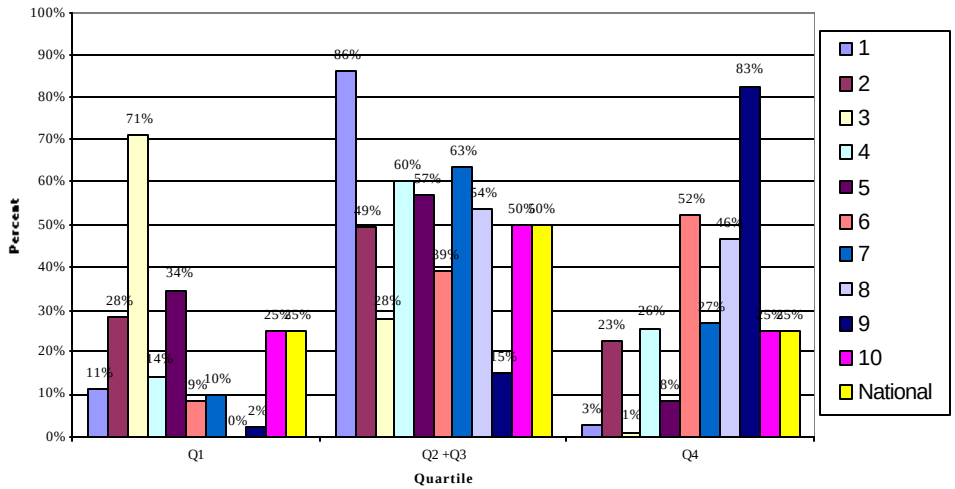
Population for SO2 Monitors: Red=Large Population, Blue=Small Population

SO2 Quartiles

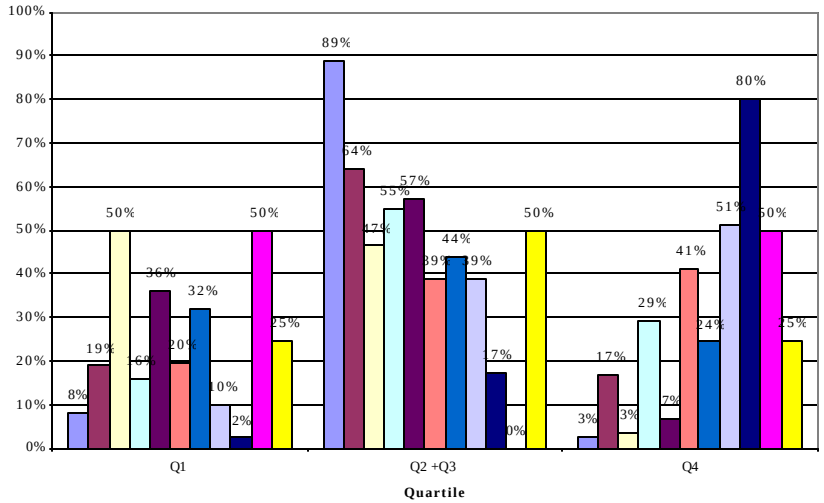
	SO2									
	so2mean	% of NAAQS	so22x	% of NAAQS	so2meanerr	so22xerr	dif_NAAQS_mean	dif_NAAQS_2x	area	population
Q1	0.0067	22.3%	0.03	21.1%	0.0018052	0.011525	0.0233	0.1105	14640	595466
Q3	0.0028	9.3%	0.012	8.6%	0.0004017	0.002549	0.0272	0.128	1088	107189

Regional Percent of Sites in National Quartiles

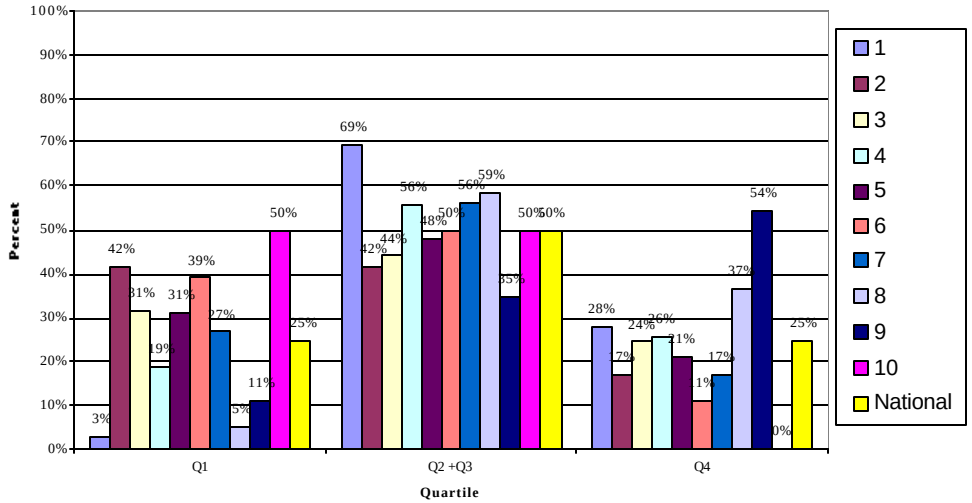
SO2 Annual Mean Concentration



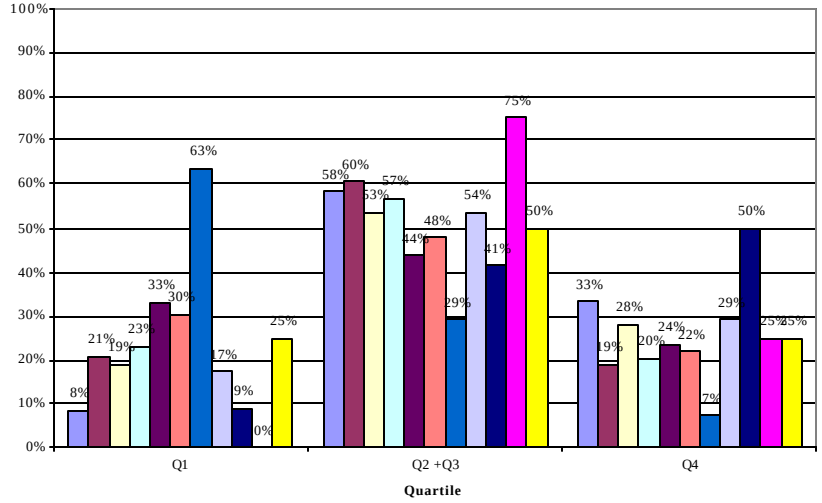
SO2 2nd Max Concentration



SO2 Annual Mean Uncertainty

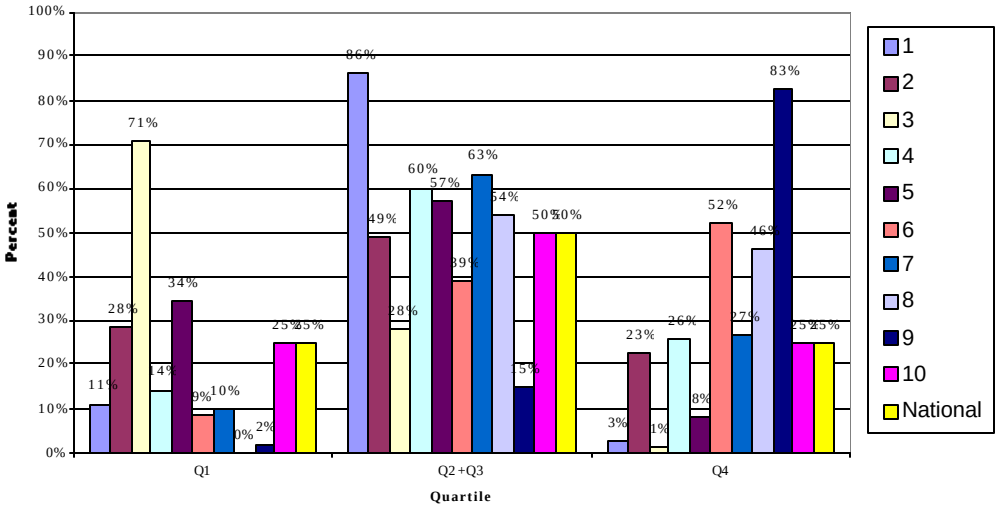


SO2 2nd Max Uncertainty

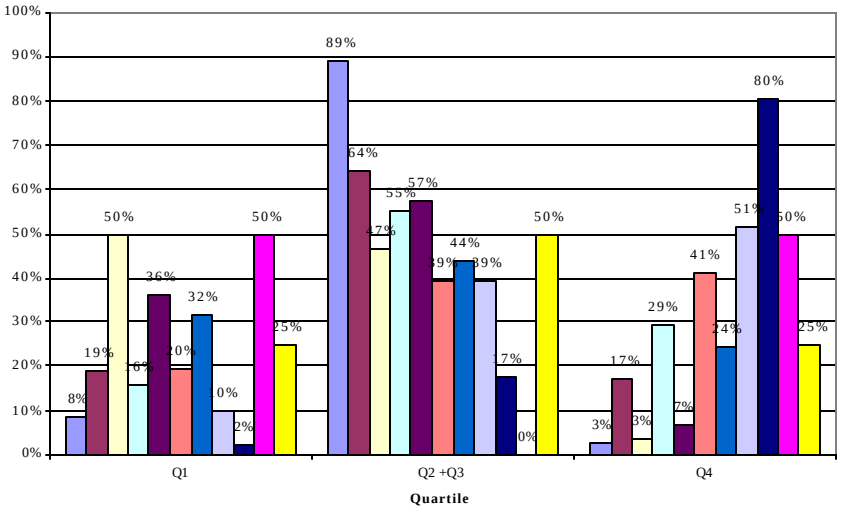


Regional Percent of Sites in National Quartiles

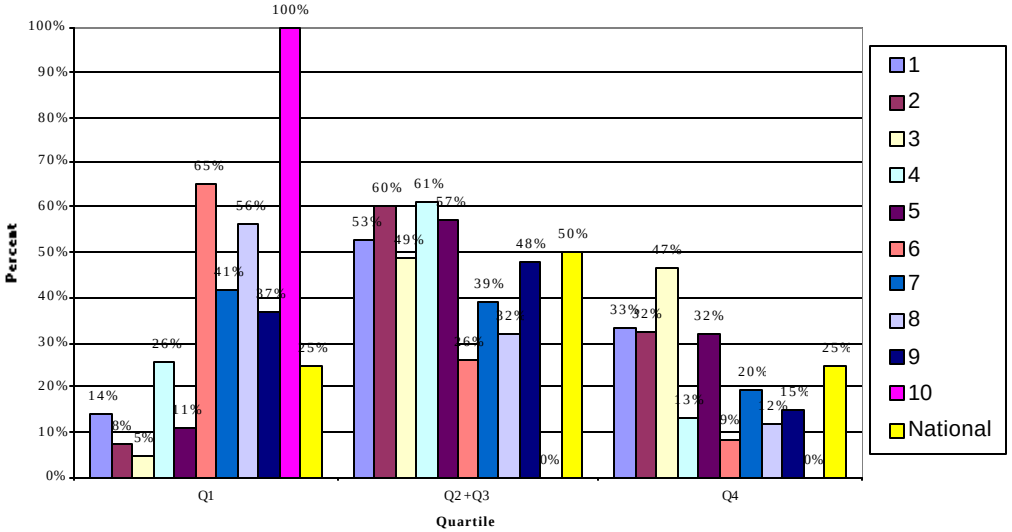
SO2 Annual Mean Deviation from NAAQS



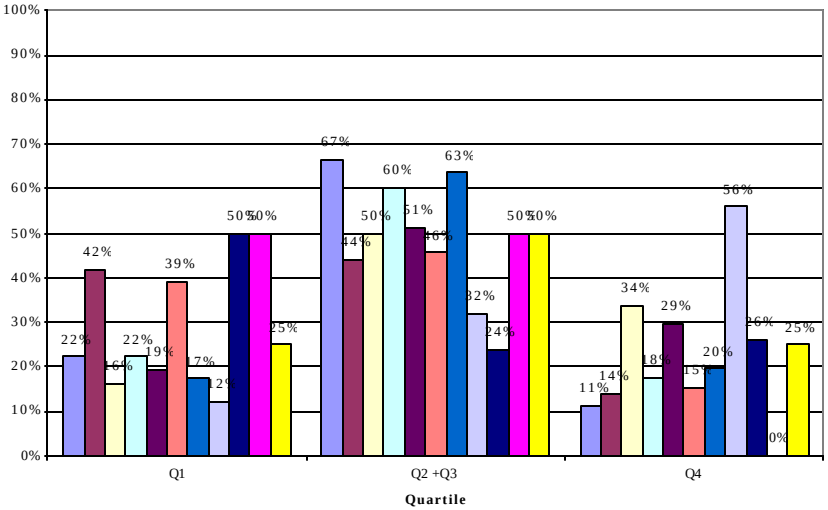
SO2 2nd Max Deviation from NAAQS



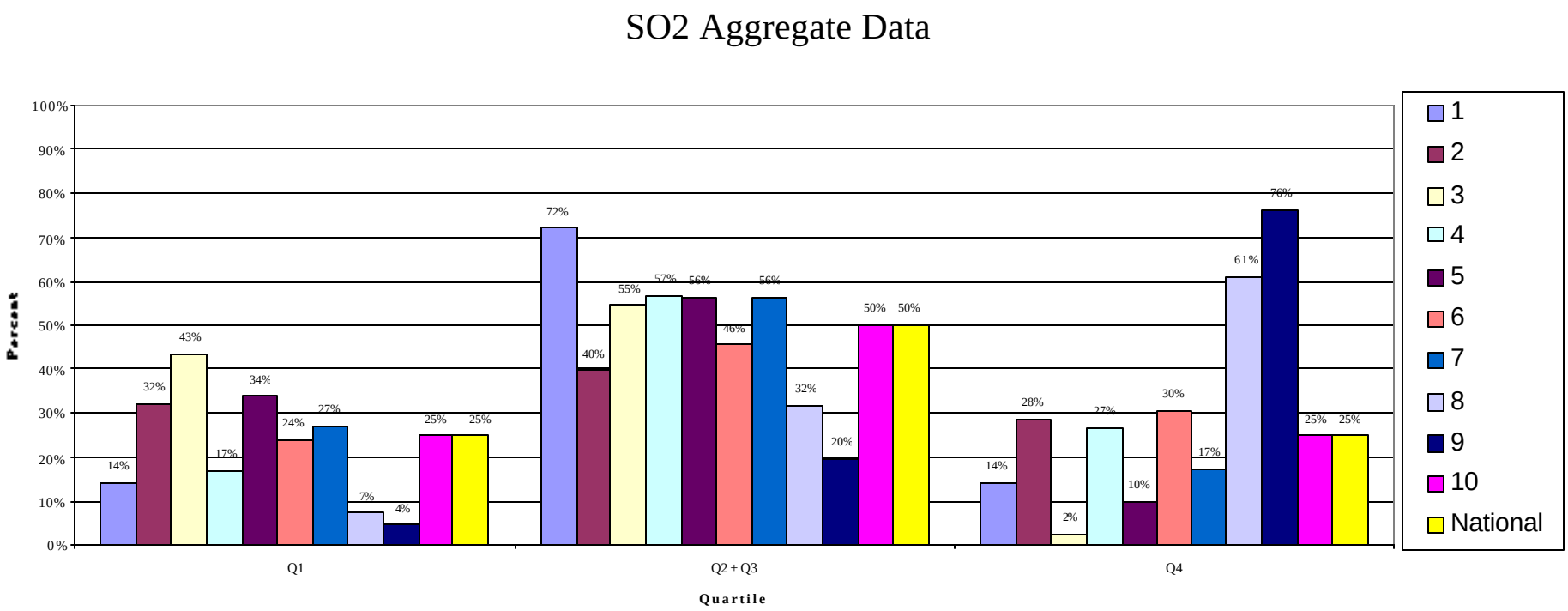
SO2 Area



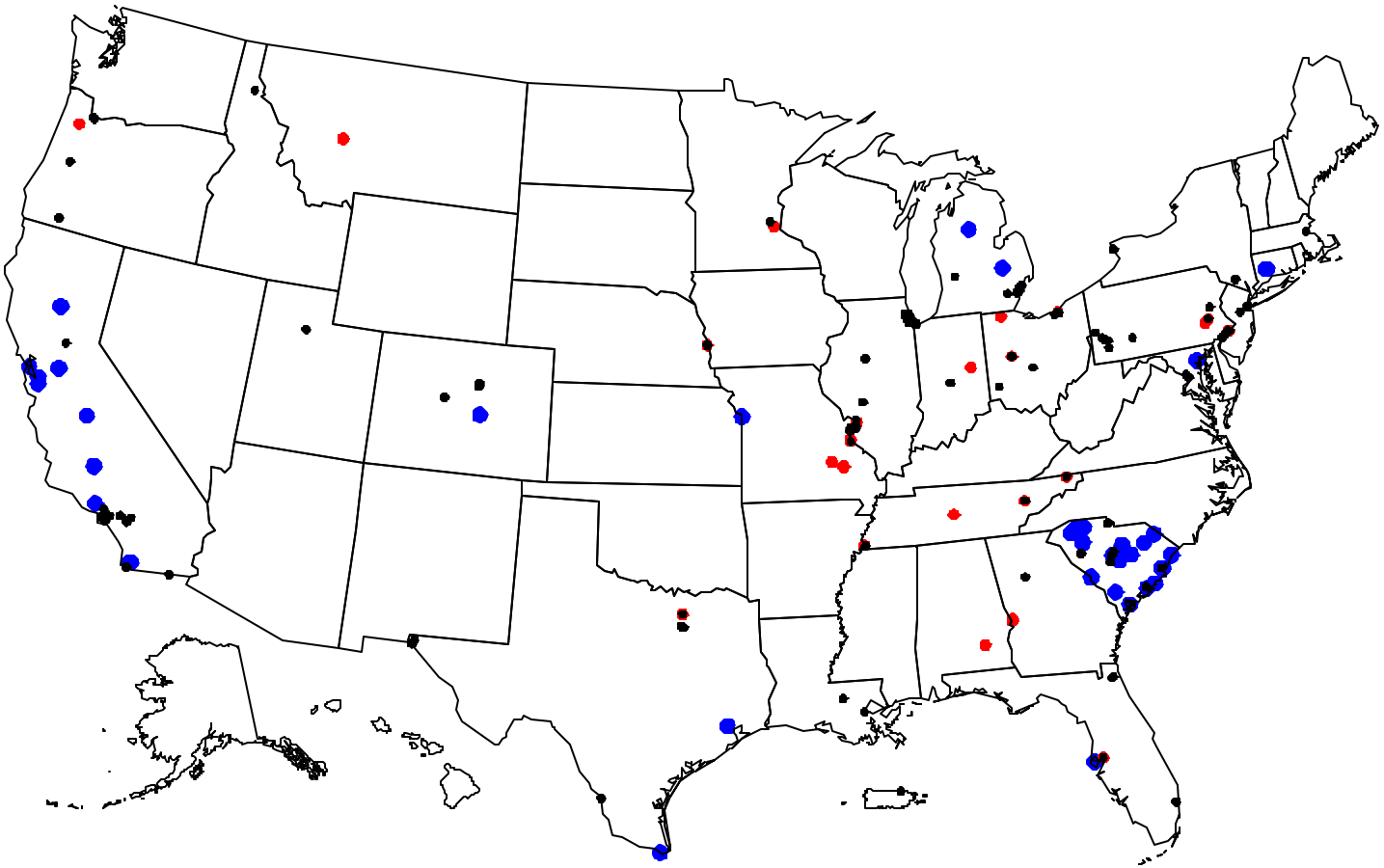
SO2 Population



Regional Percent of Sites in National Quartiles

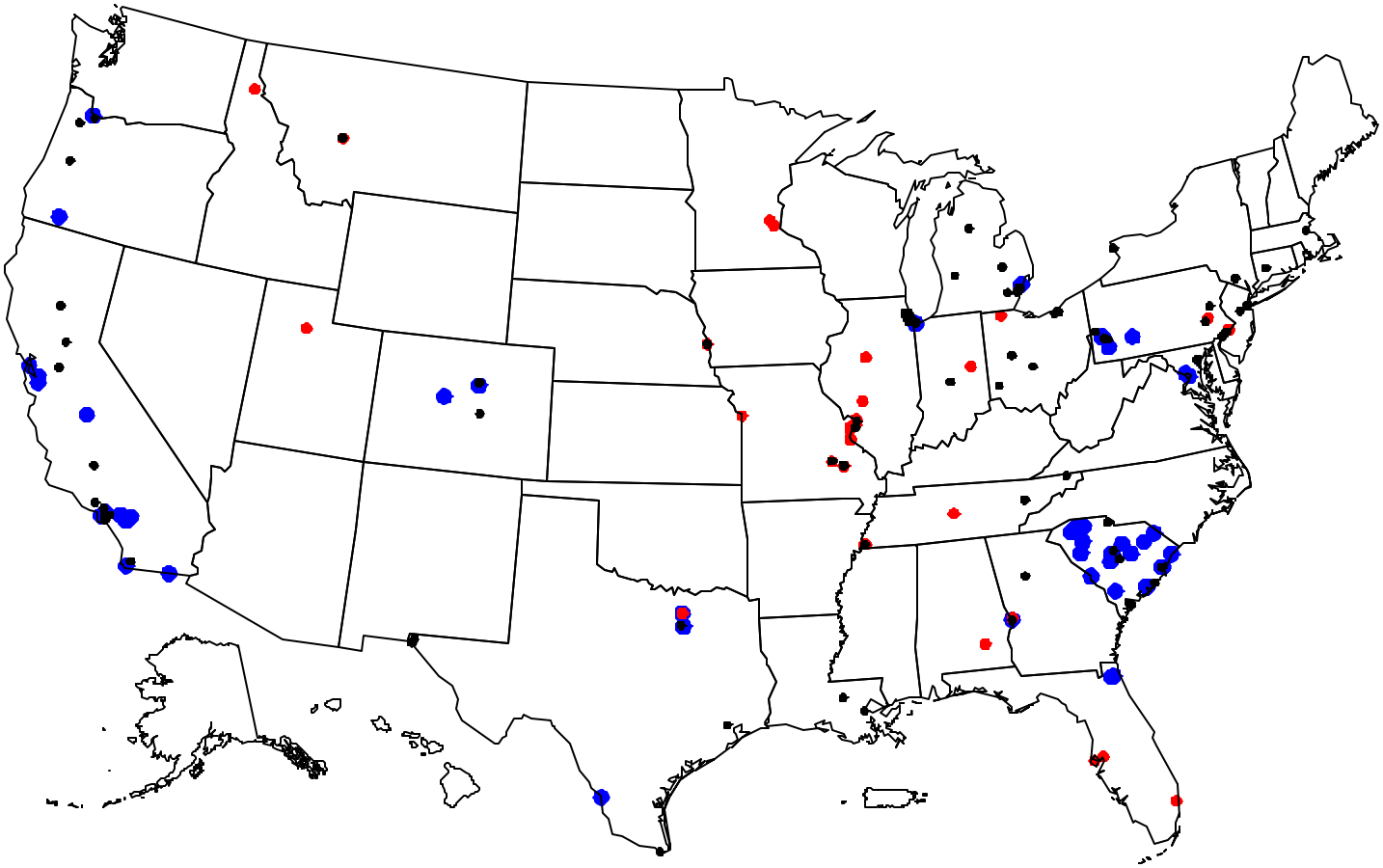


Pb Max Quarterly Average: Red=Large Value, Blue=Small Value



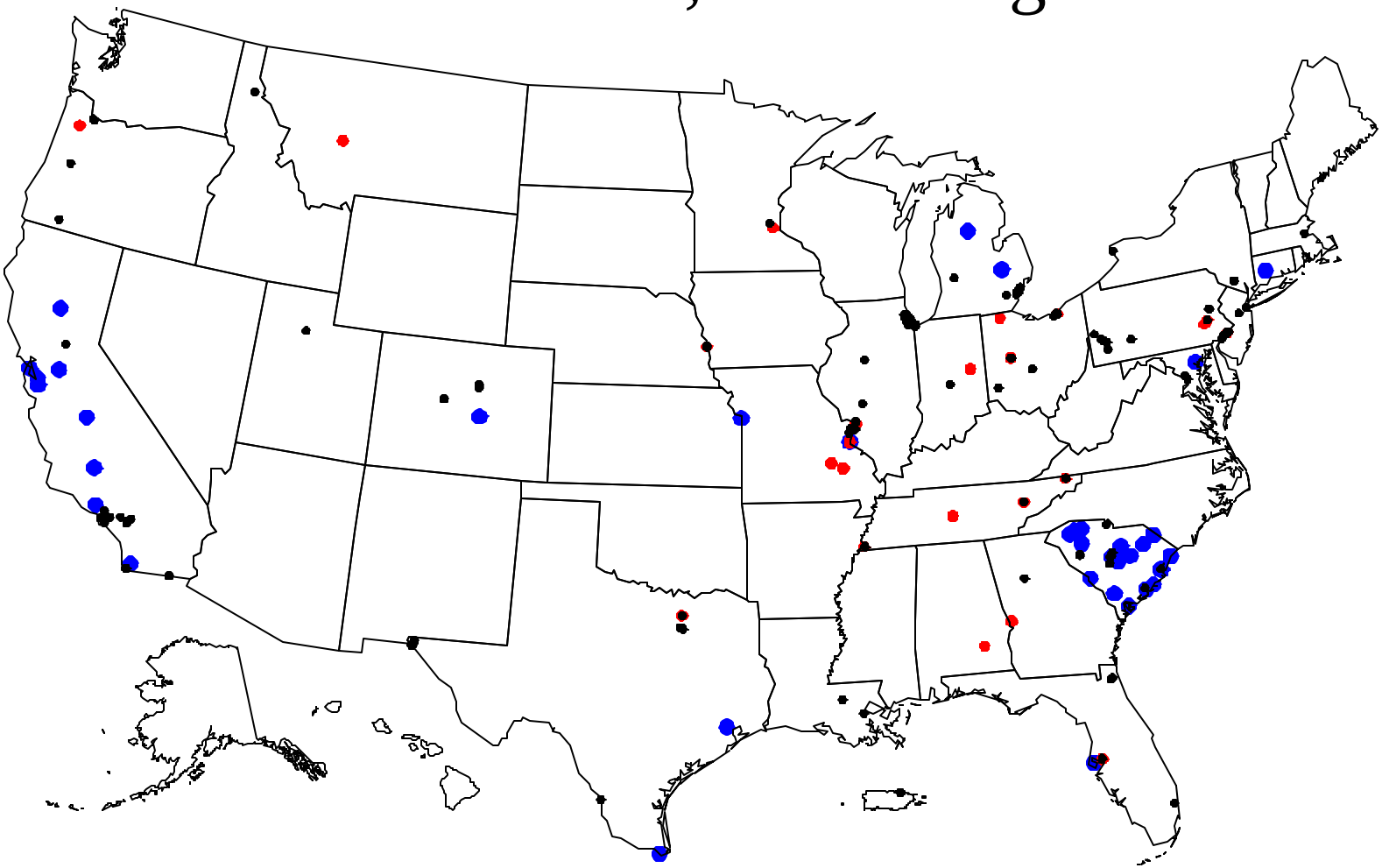
Pb Max Quarterly Average: Red=Large Value, Blue=Small Value

Predicting Pb Max Quarterly Average: Red=High Uncertainty, Blue=Low Uncertainty



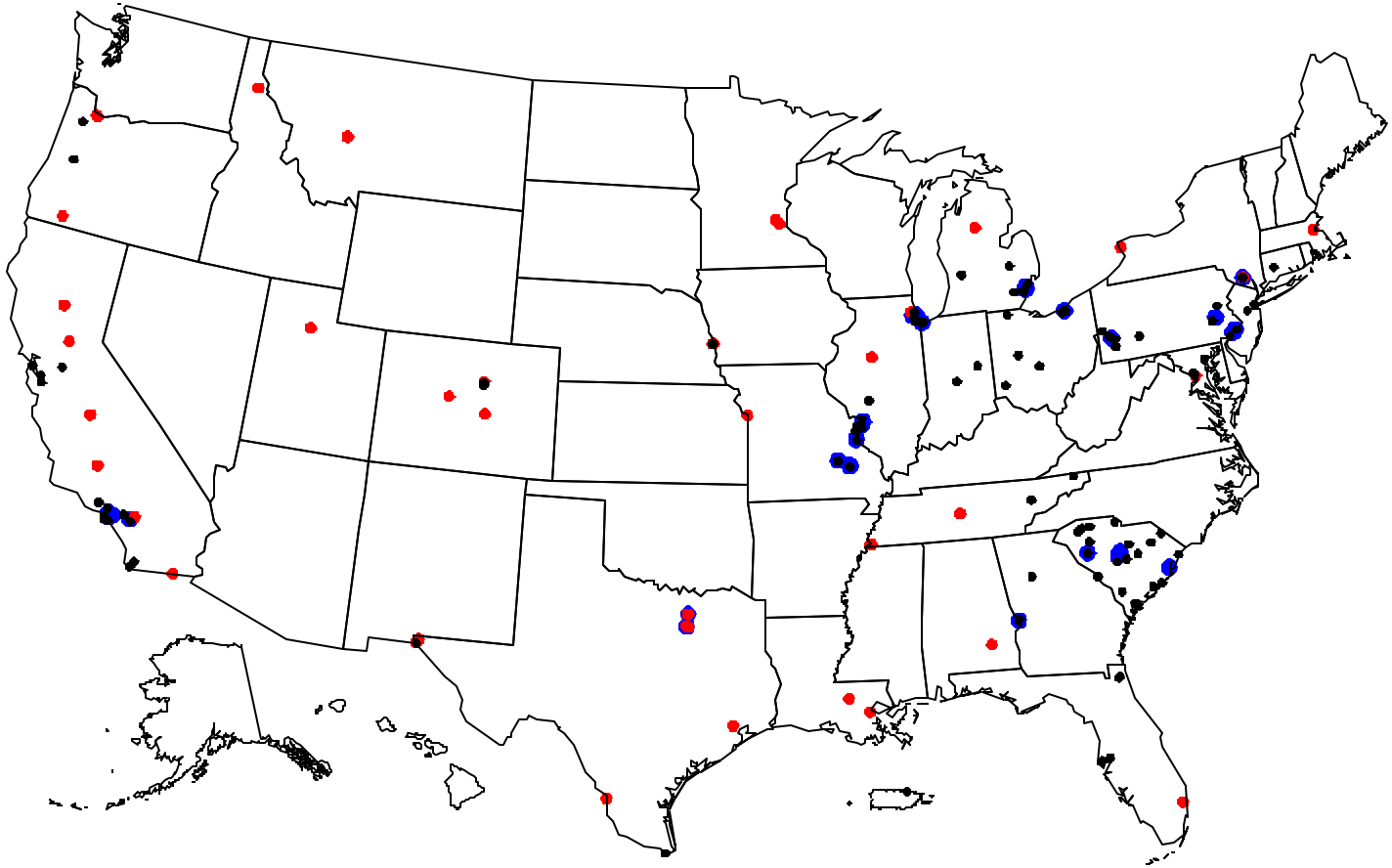
Predicting Pb Max Quarterly Average: Red=High Uncertainty, Blue=Low Uncertainty

Pb Max Quart. Avg. Deviation from NAAQS: Red=Small Deviation, Blue=Large Deviation



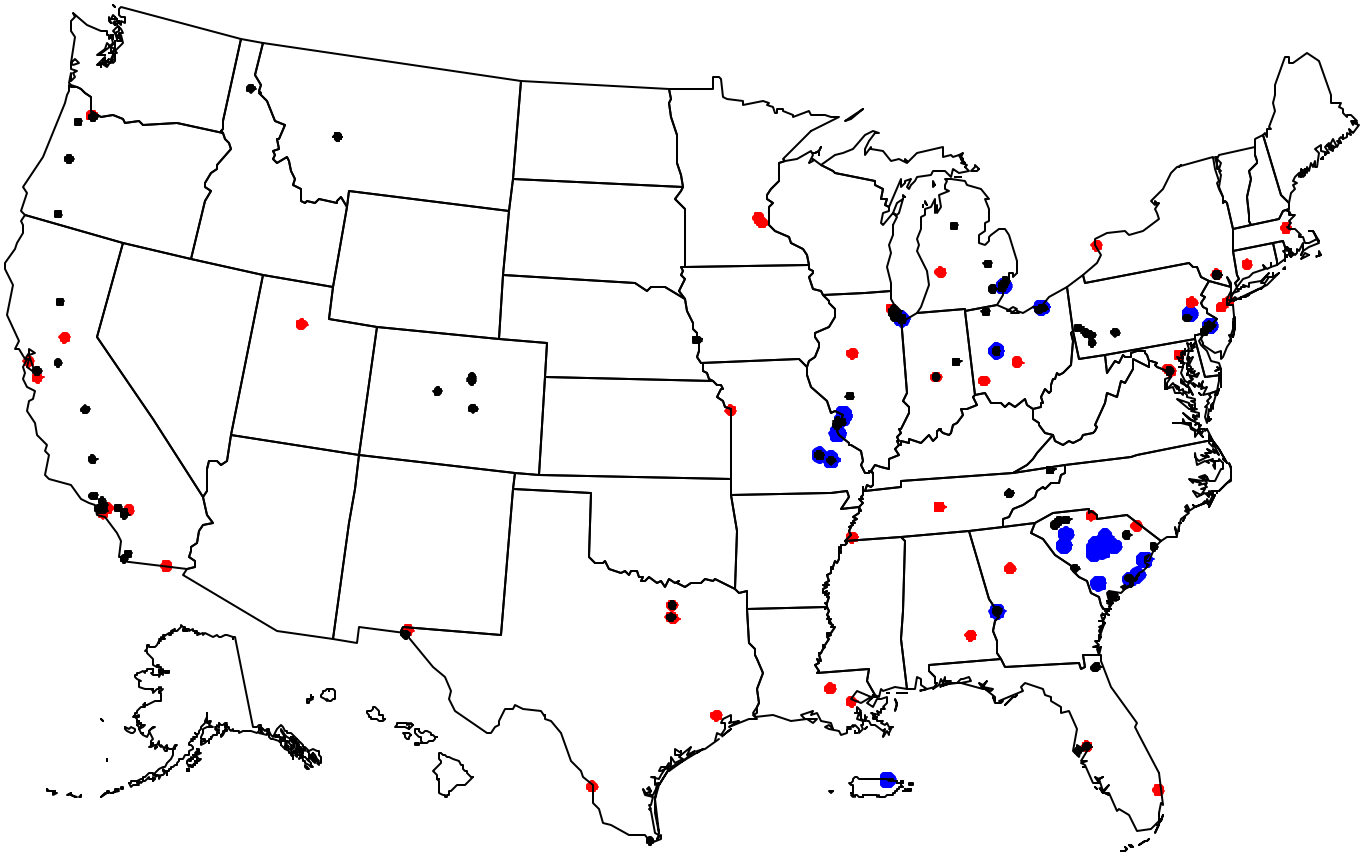
Pb Max Quart. Avg. Deviation from NAAQS: Red=Small Deviation, Blue=Large Deviation

Area for Pb Monitors: Red=Large Area, Blue=Small Area



Area for Pb Monitors: Red=Large Area, Blue=Small Area

Population for Pb Monitors: Red=Large Population, Blue=Small Population



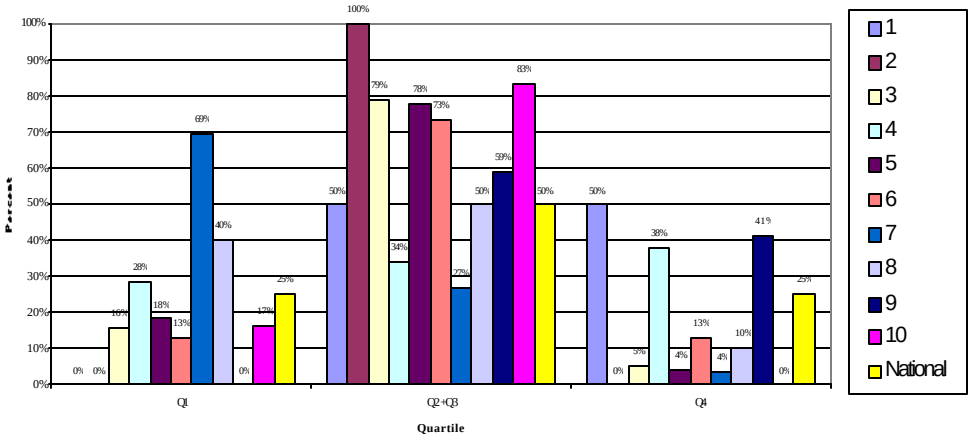
Population for Pb Monitors: Red=Large Population, Blue=Small Population

Pb Quartiles

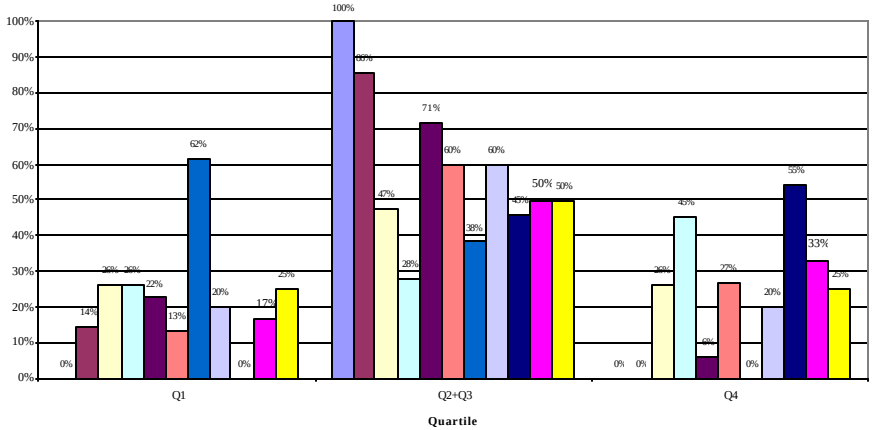
	Pb					
	pbmax	% of NAAQS	pberr	dif_NAAQS_max	area	population
Q1	0.19	12.7%	0.2	1.32	58037.6	1955120
Q3	0.02	1.3%	0.011	1.48	2362.35	254385

Regional Percent of Sites in National Quartiles

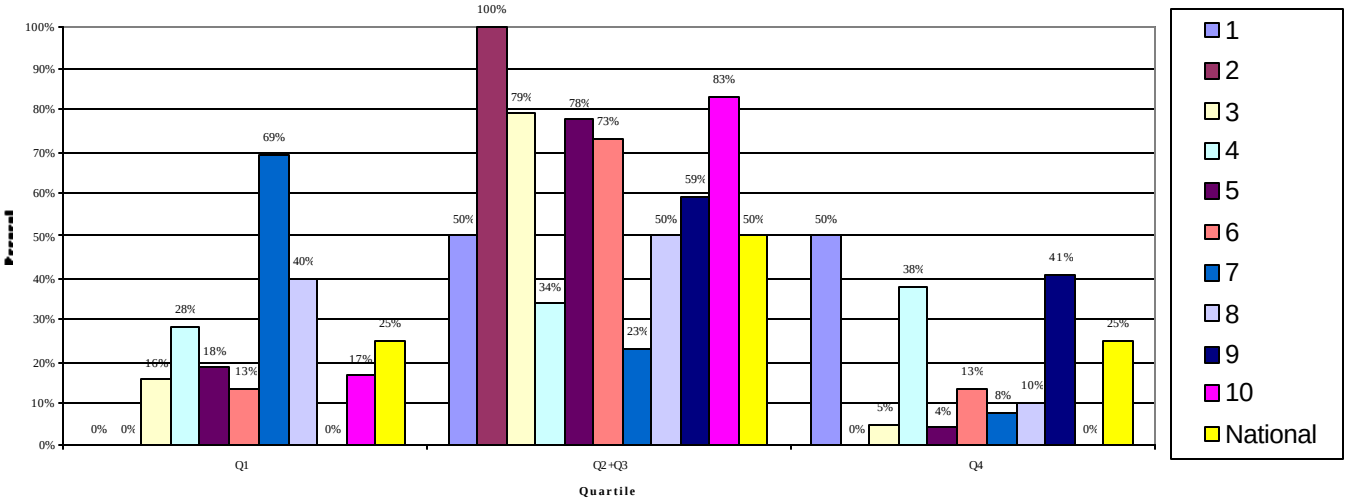
Pb Max Quarterly Average Concentration



Pb Uncertainty

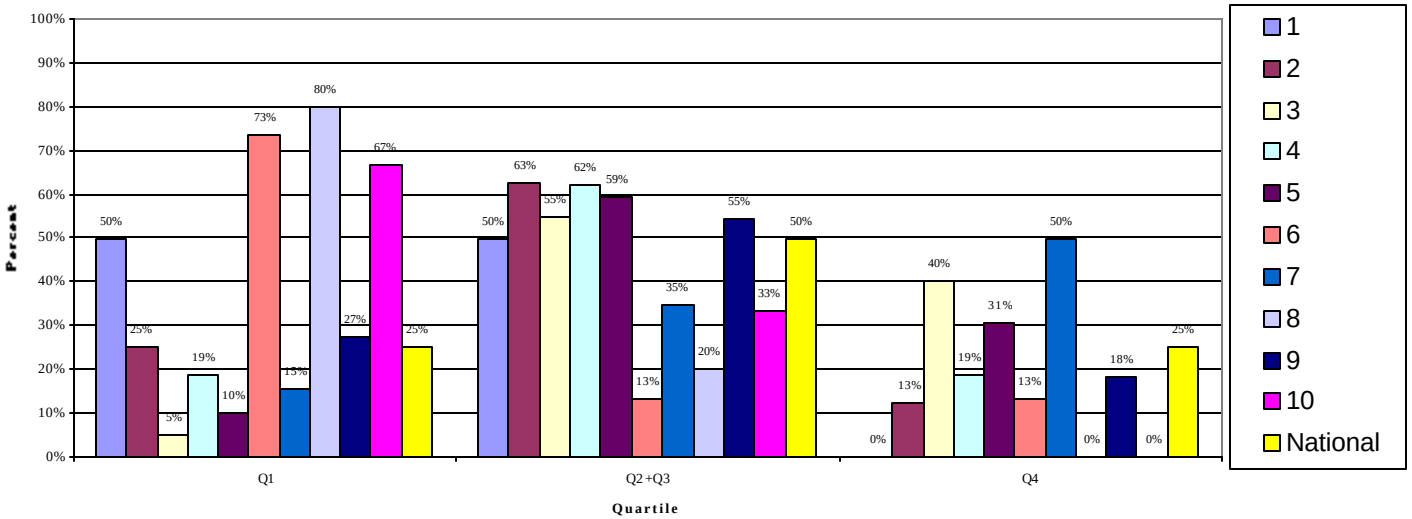


Pb Deviation from NAAQS

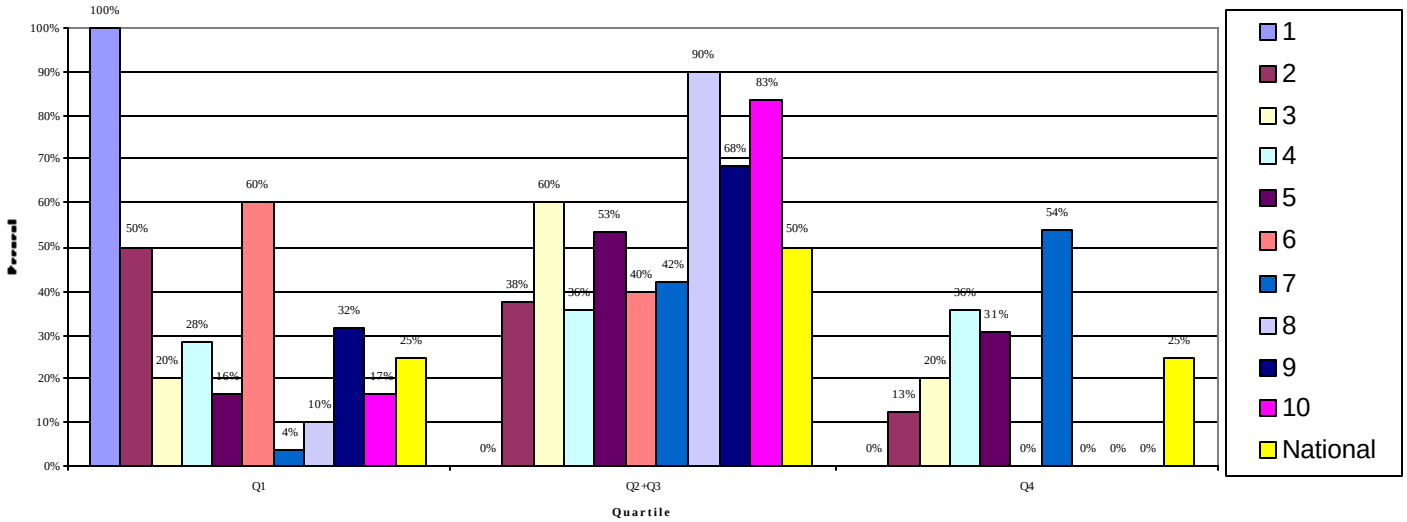


Regional Percent of Sites in National Quartiles

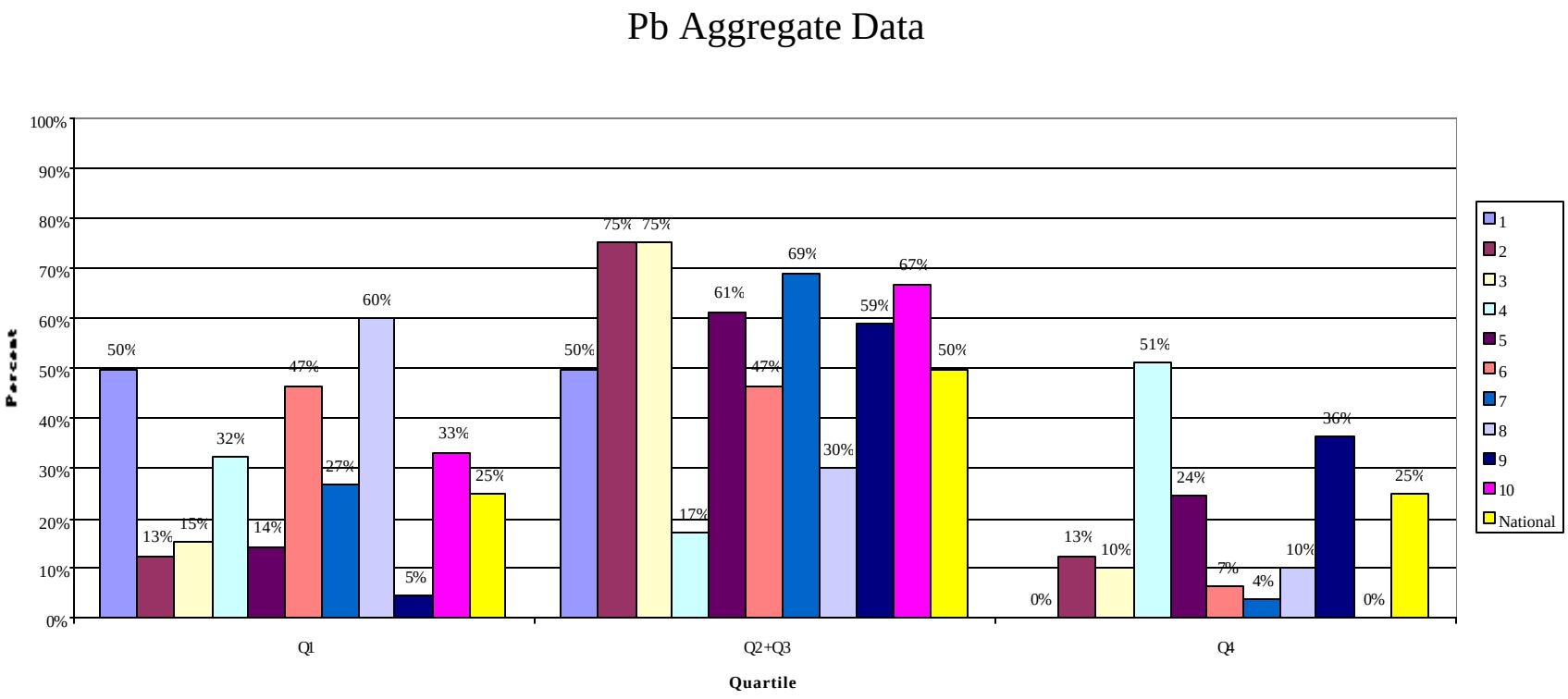
Pb Area



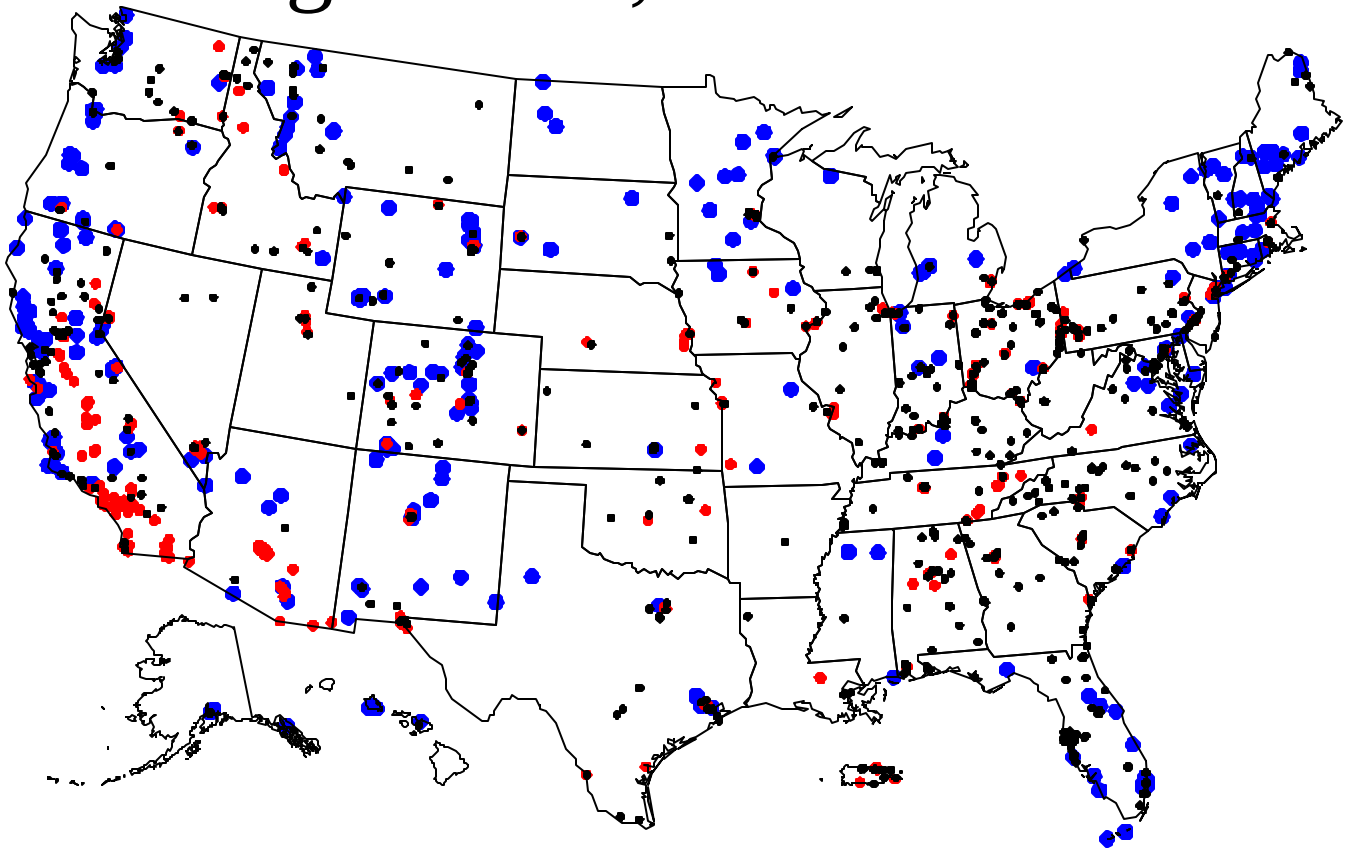
Pb Population



Regional Percent of Sites in National Quartiles

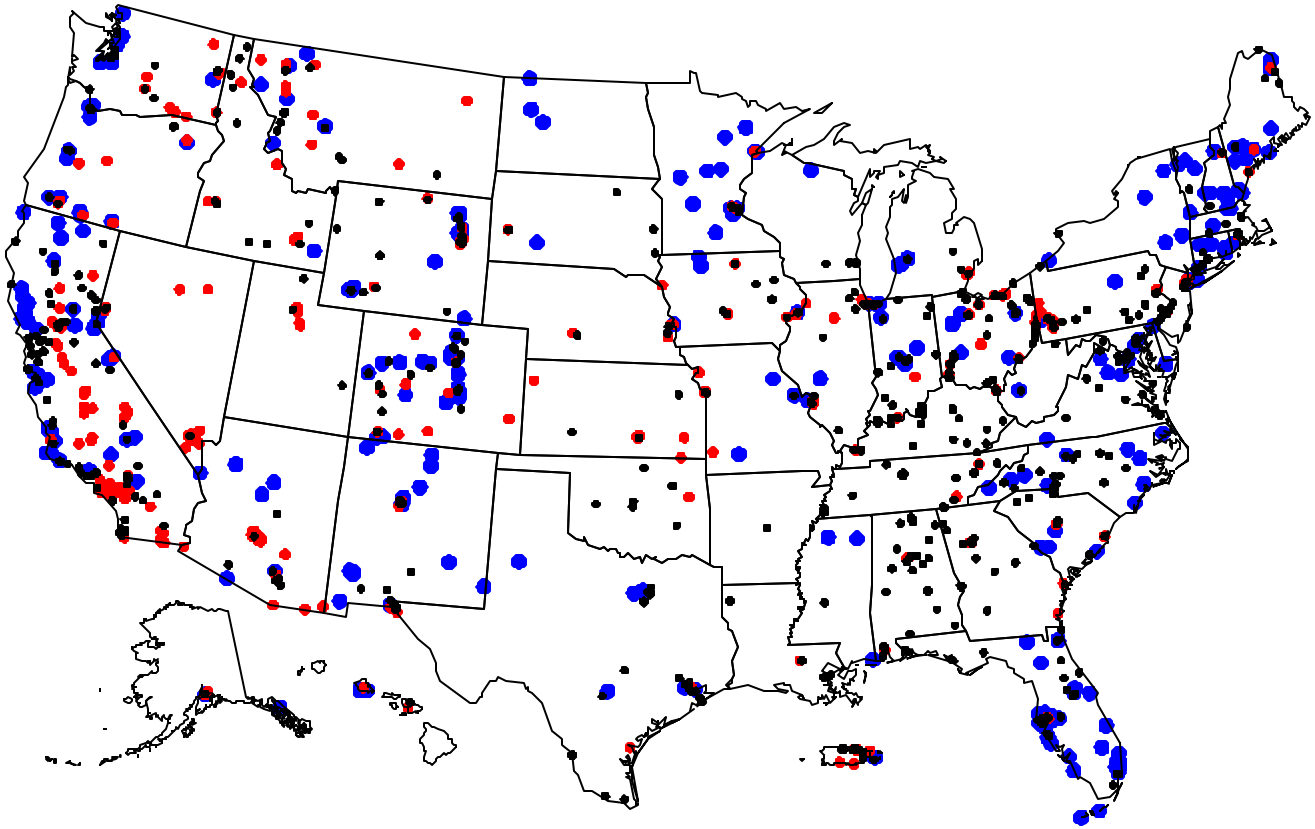


PM10 Annual Mean:
Red=Large Value, Blue=Small Value



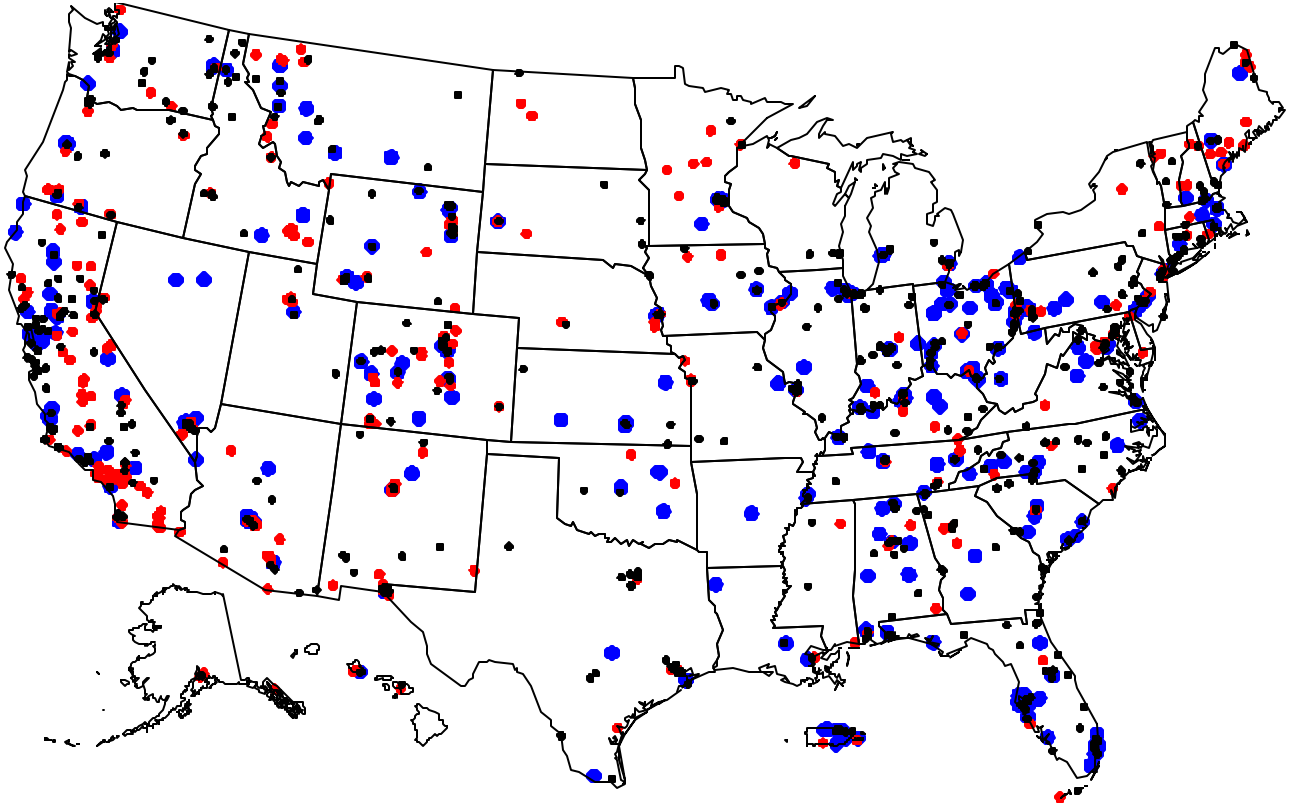
PM10 Annual Mean: Red=Large Value, Blue=Small Value

PM10 2nd Max:
Red=Large Value, Blue=Small Value



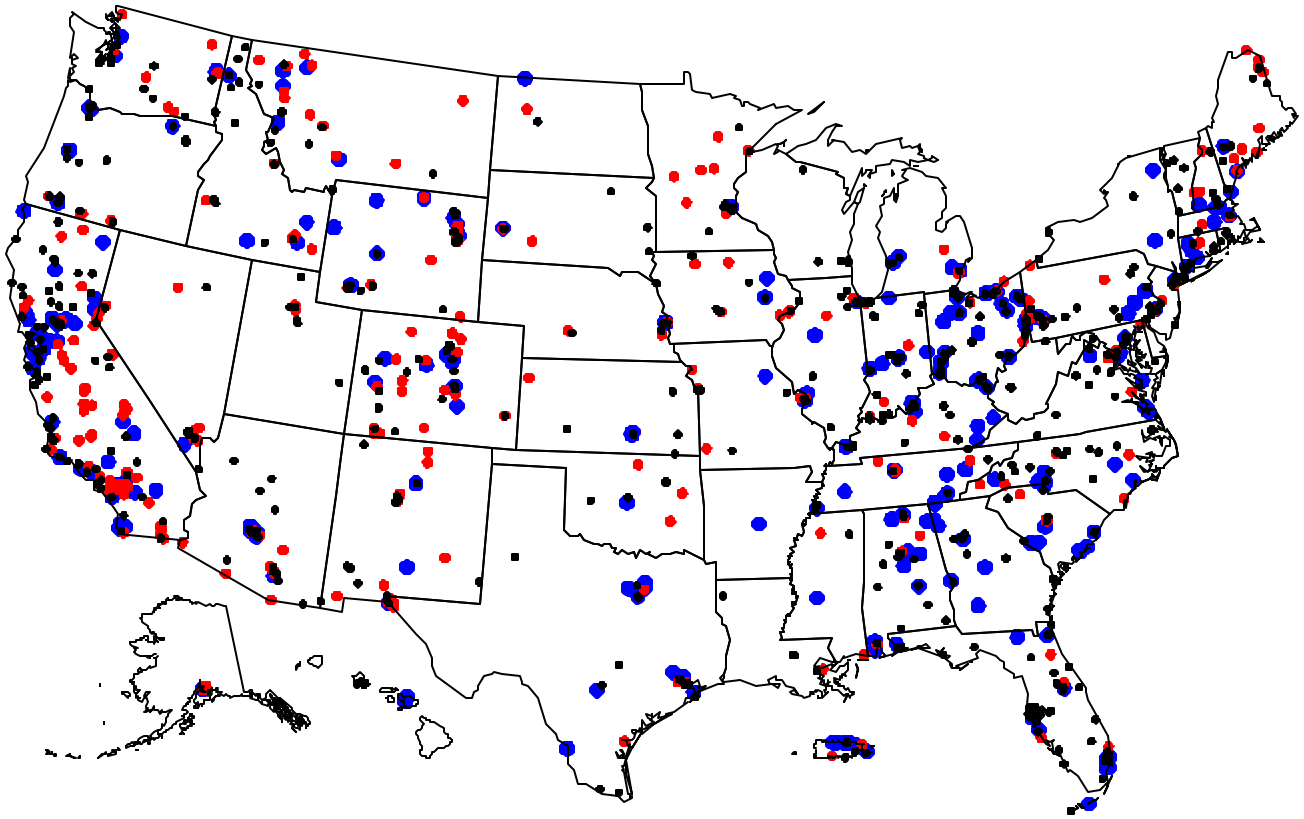
PM10 2nd Max: Red=Large Value, Blue=Small Value

Predicting PM10 Annual Mean: Red=High Uncertainty, Blue=Low Uncertainty



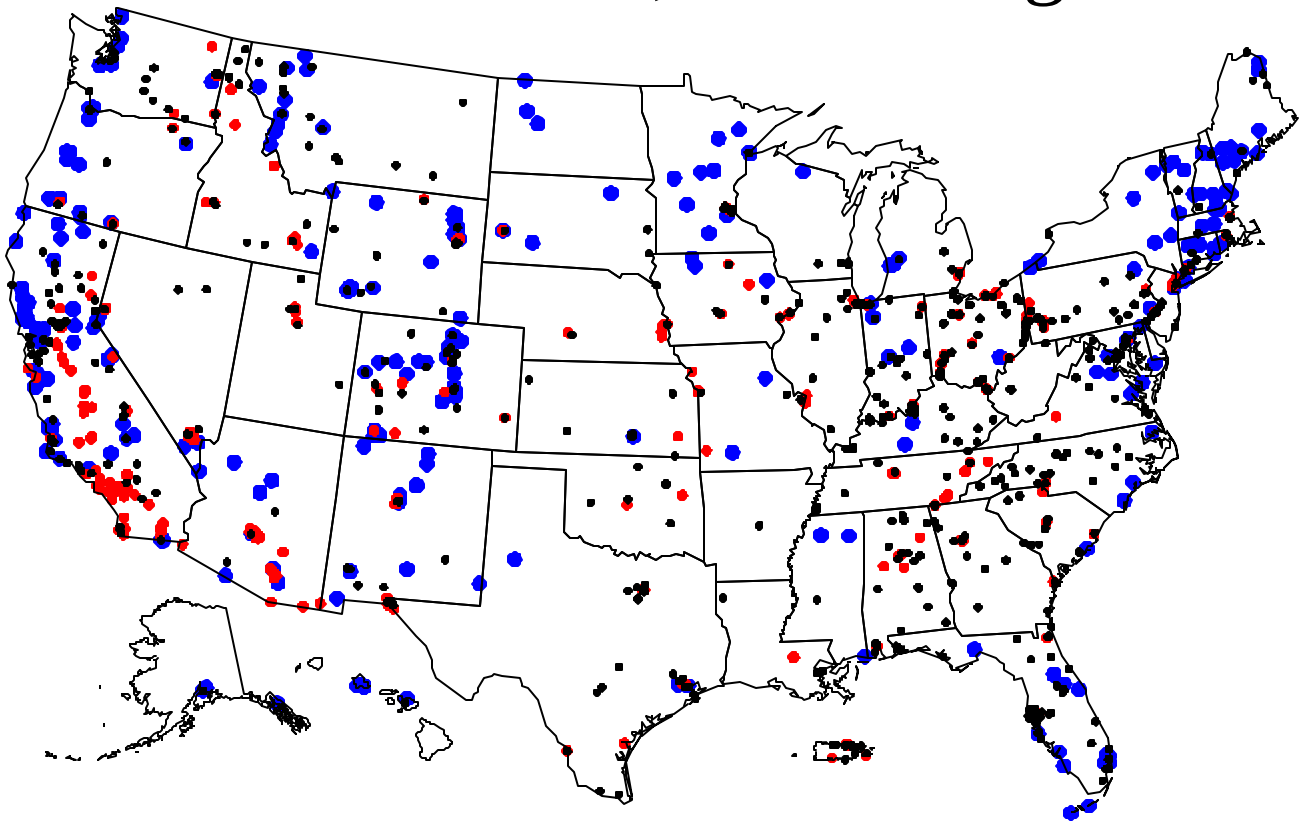
Predicting PM10 Annual Mean: Red=High Uncertainty, Blue=Low Uncertainty

Predicting PM10 2nd Max: Red=High Uncertainty, Blue=Low Uncertainty



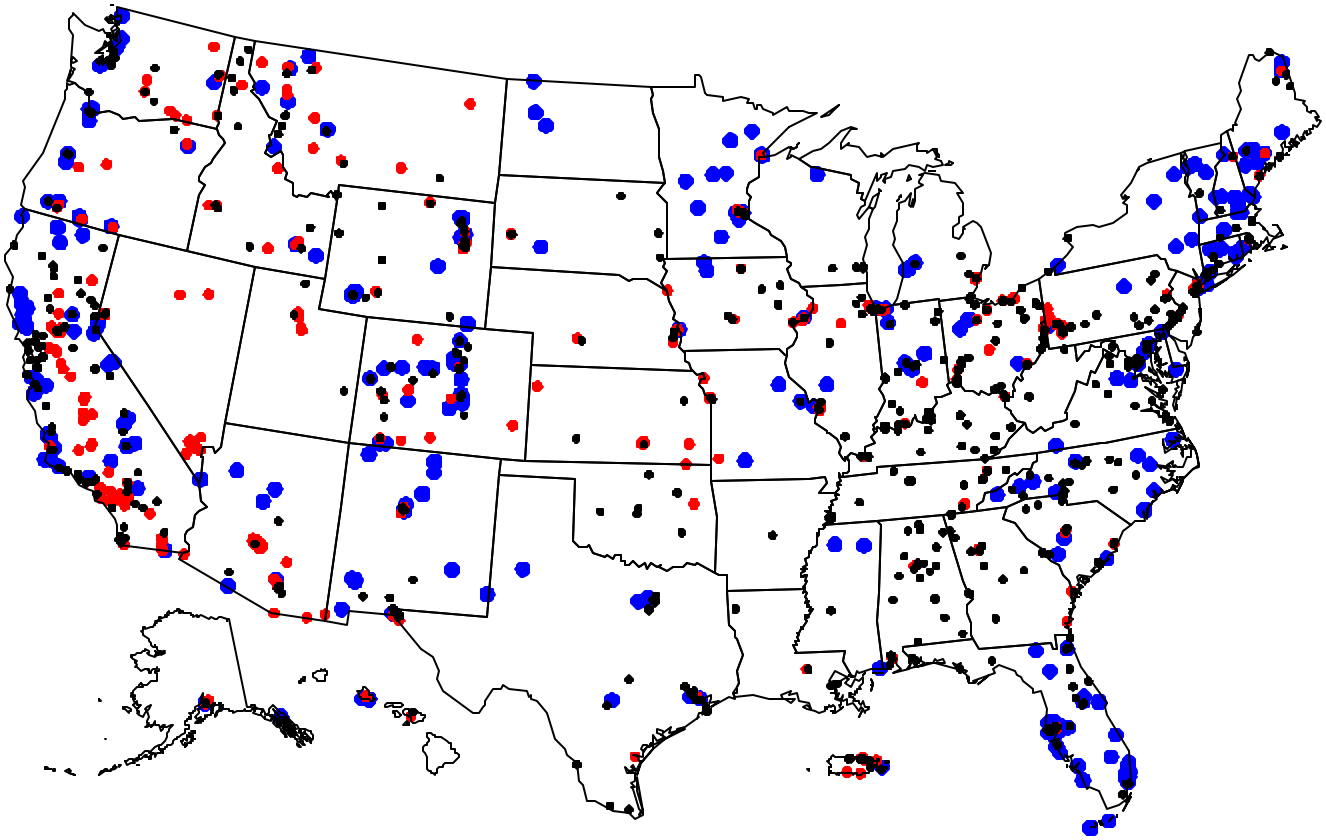
Predicting PM10 2nd Max: Red=High Uncertainty, Blue=Low Uncertainty

Deviation from PM10 Annual Mean NAAQS: Red=Small Deviation, Blue=Large Deviation



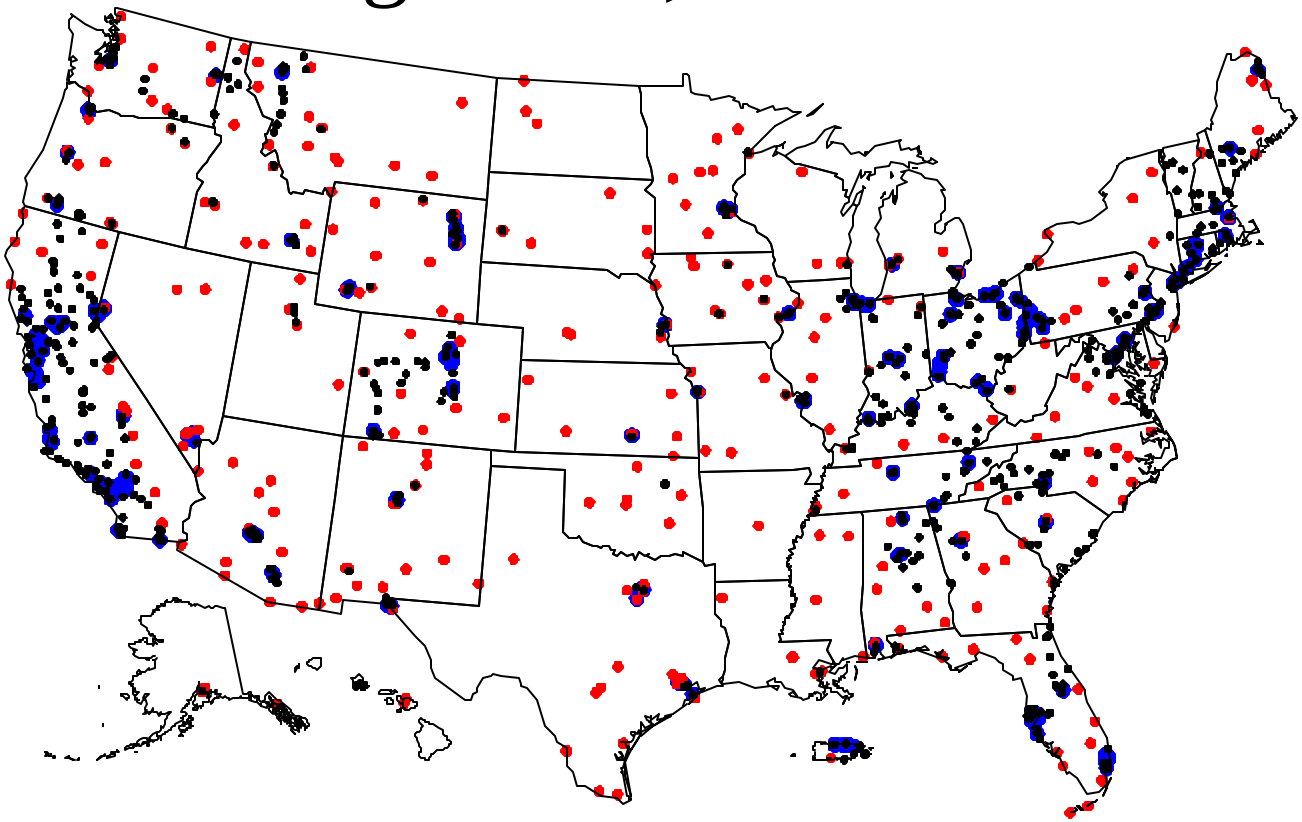
Deviation from PM10 Annual Mean NAAQS: Red=Small Deviation, Blue=Large Deviation

Deviation from PM10 24-Hour NAAQS: Red=Small Deviation, Blue=Large Deviation



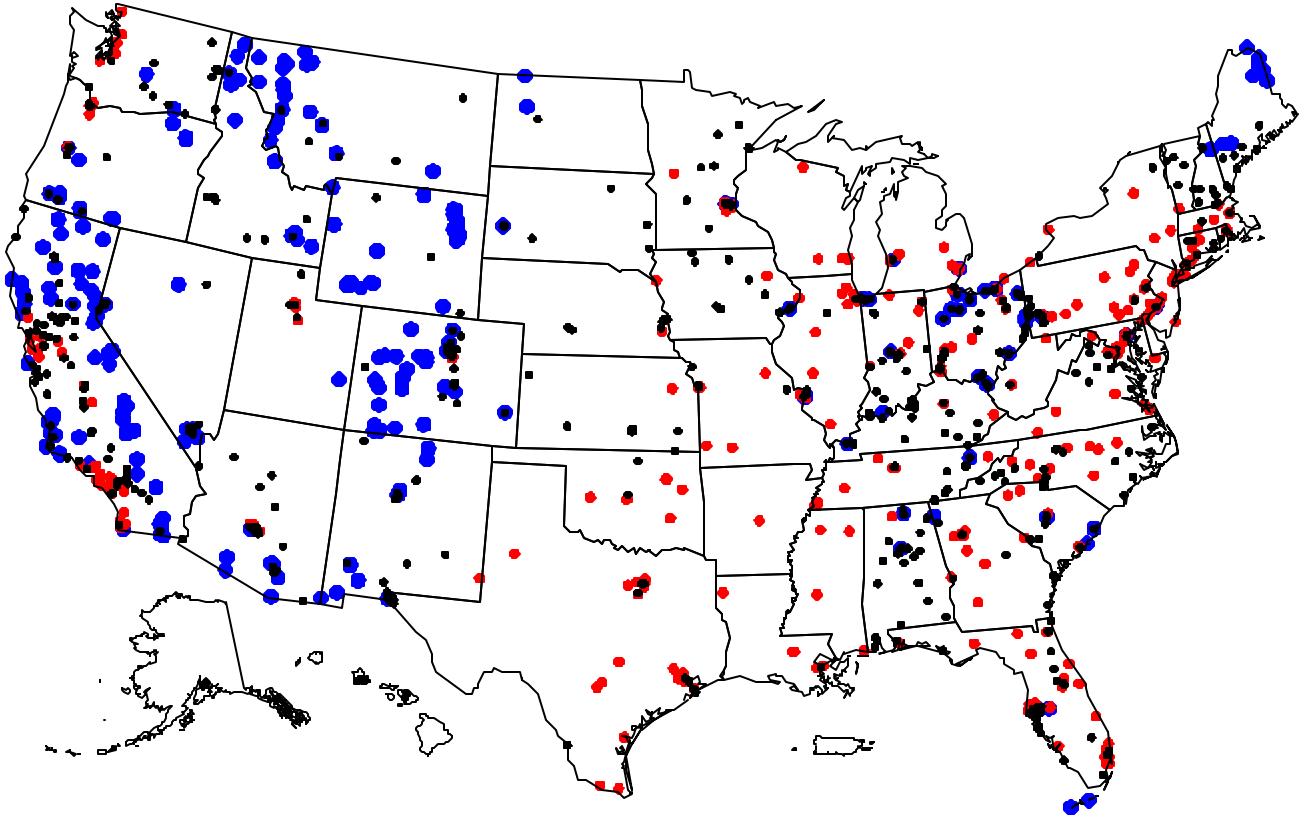
Deviation from PM10 24-Hour NAAQS: Red=Small Deviation, Blue=Large Deviation

Area for PM10 Monitors: Red=Large Area, Blue=Small Area



Area for PM10 Monitors: Red=Large Area, Blue=Small Area

Population for PM10 Monitors: Red=Large Population, Blue=Small Population



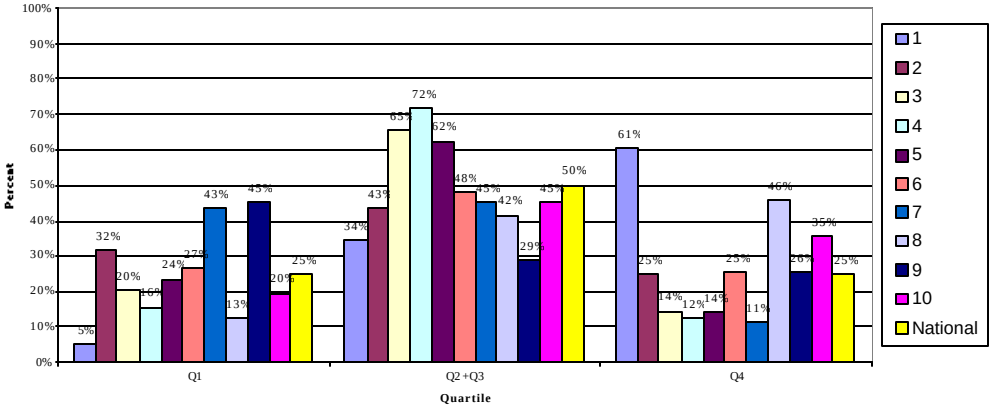
Population for PM10 Monitors: Red=Large Population, Blue=Small Population

PM10 Quartiles

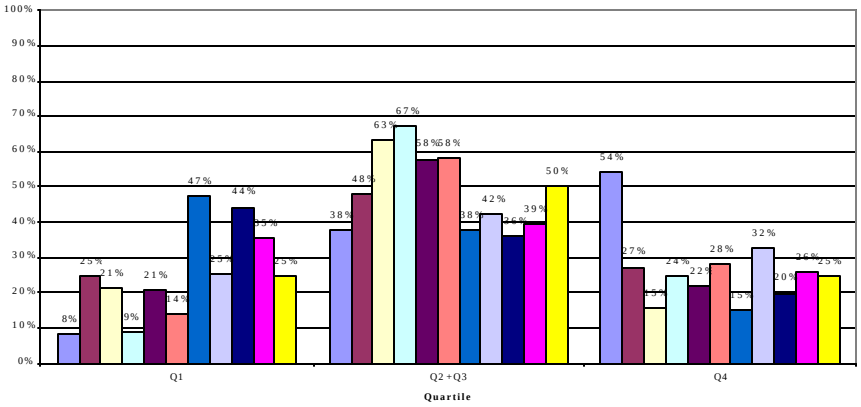
	PM10									
	pm10mean	% of NAAQS	pm102x	% of NAAQS	pm10meanerr	pm102xerr	n	dif_NAAQS_2x	area	population
Q1	27.8	55.6%	66.7	44.5%	8.60625	24.08809	22.3	84.3	8729	308375.5
Q3	19.4	38.8%	42.7	28.5%	1.9877	5.51636	30.6	107.3	1002	44376.5

Regional Percent of Sites in National Quartiles

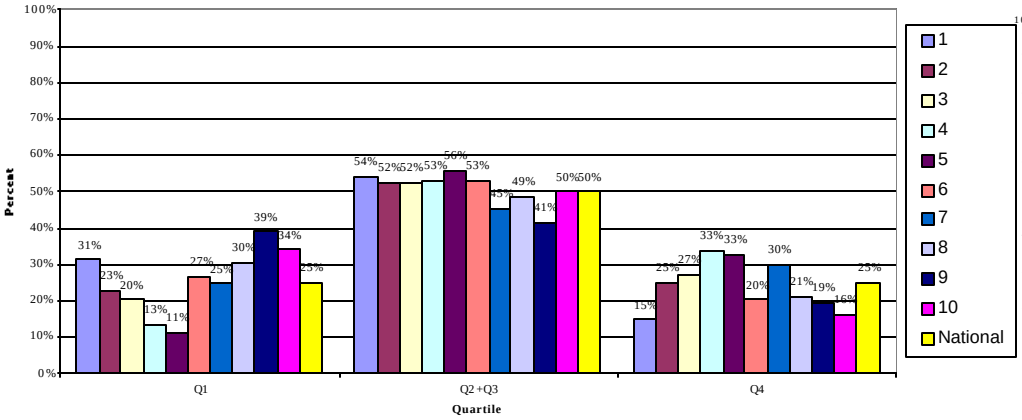
PM10 Annual Mean Concentration



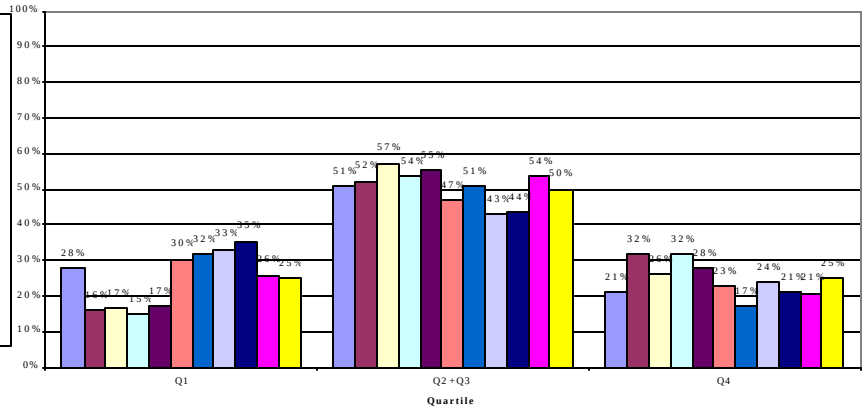
PM10 2nd Max Concentration



PM10 Annual Mean Uncertainty

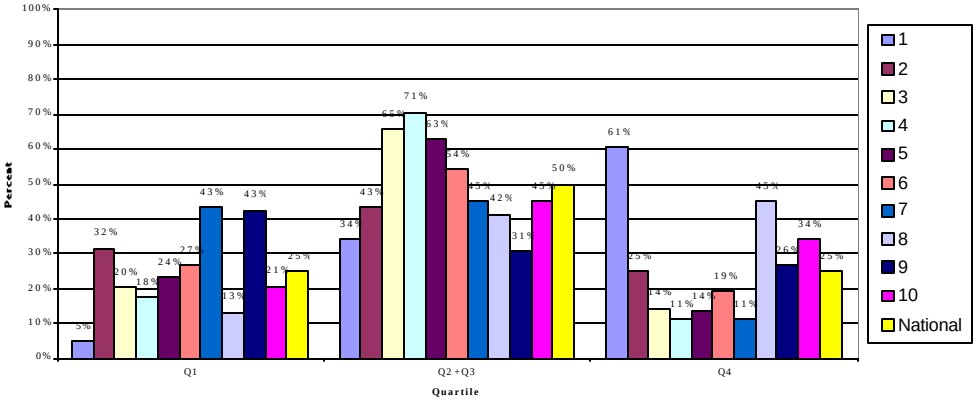


PM10 2nd Max Uncertainty

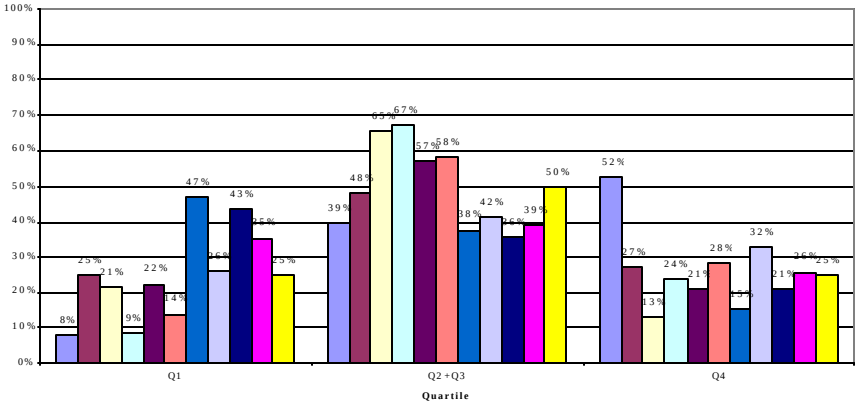


Regional Percent of Sites in National Quartiles

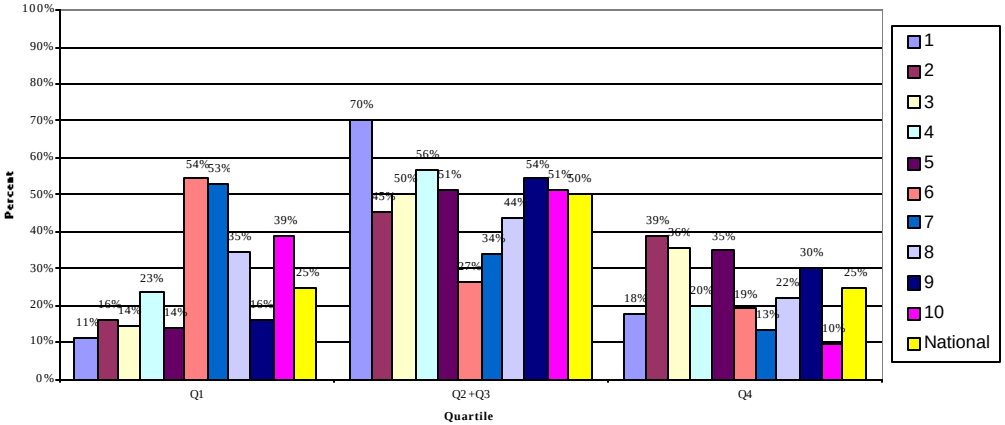
PM10 Annual Mean Deviation from NAAQS



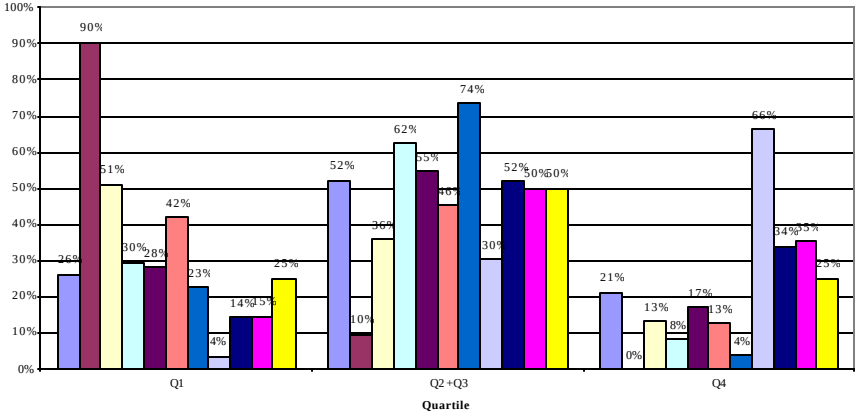
PM10 2nd Max Deviation from NAAQS



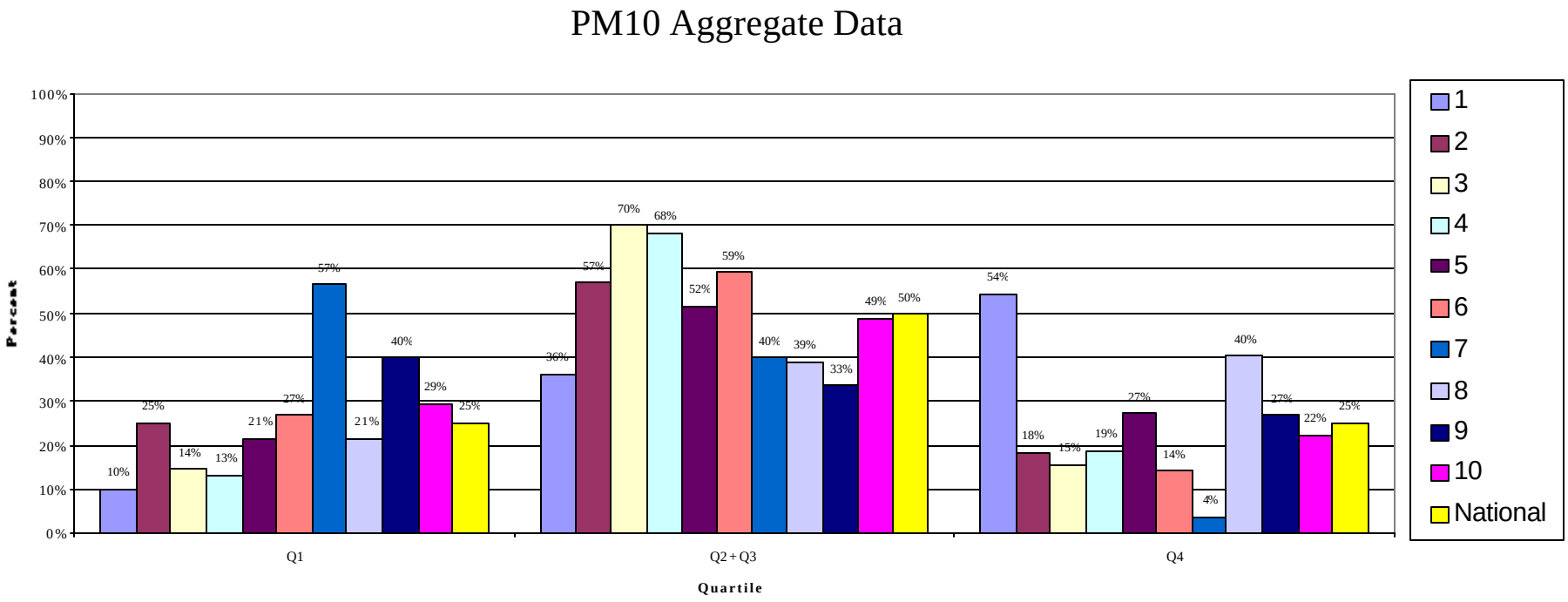
PM10 Area



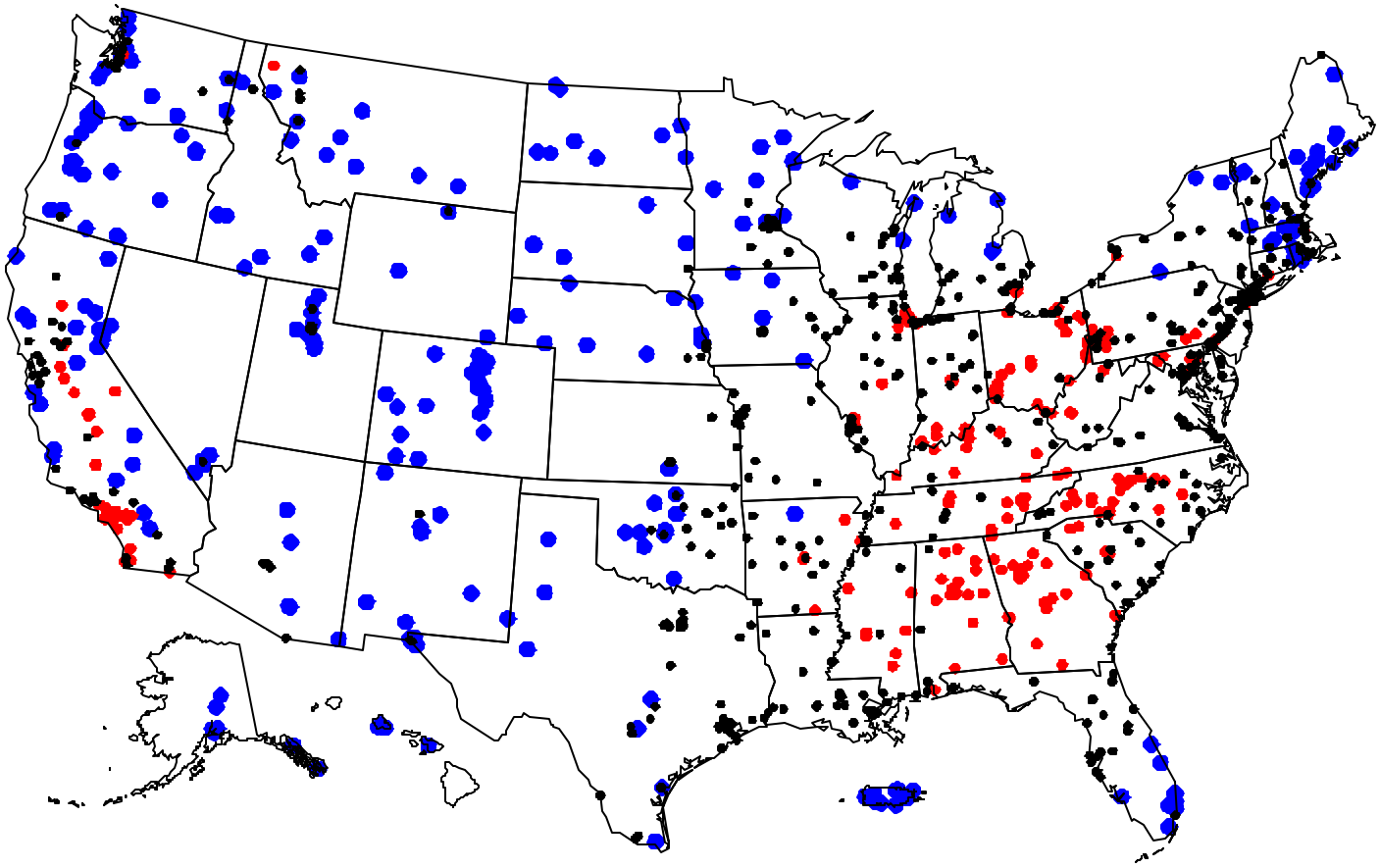
PM10 Population



Regional Percent of Sites in National Quartiles

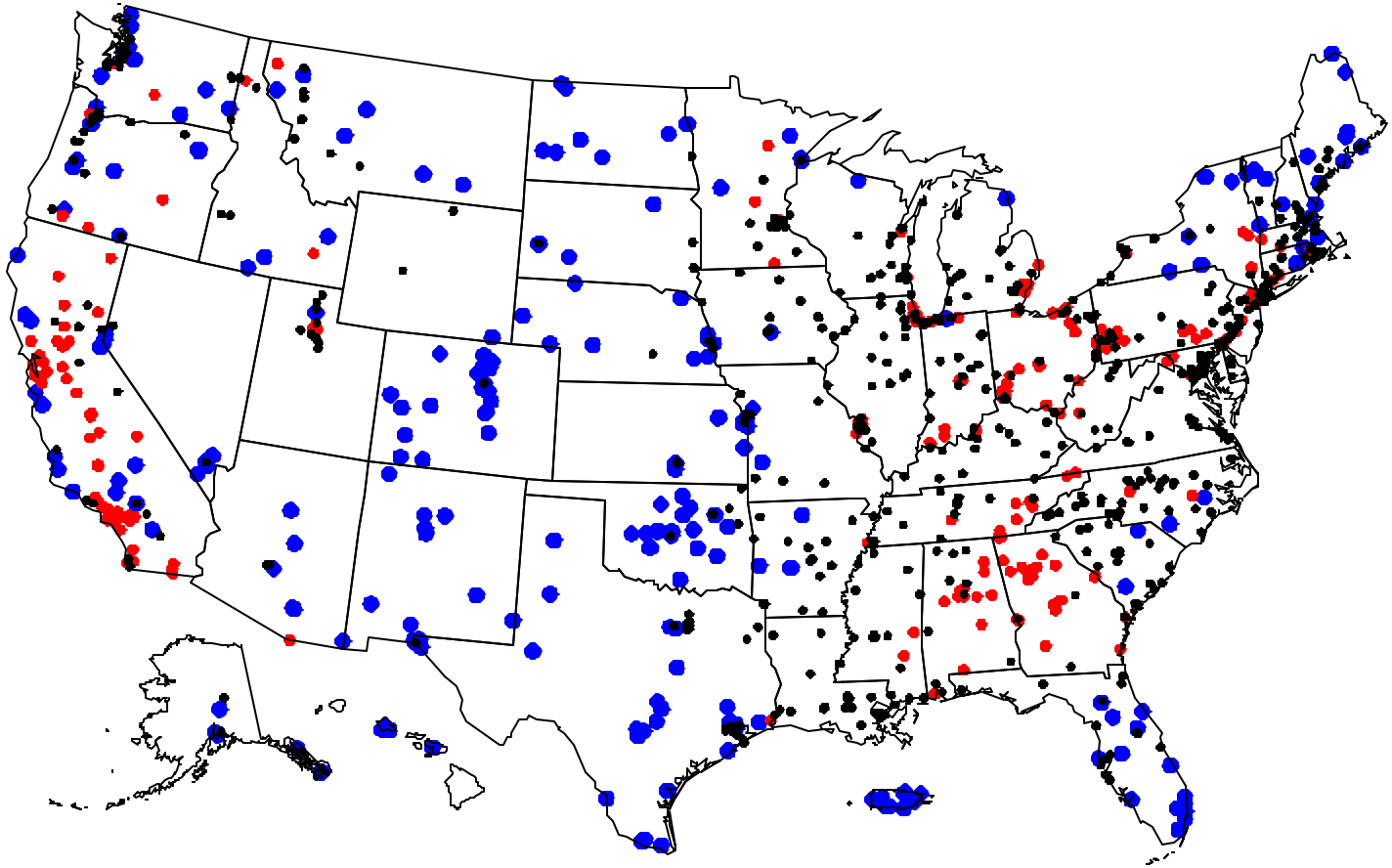


PM25 Annual Mean:
Red=Large Value, Blue=Small Value



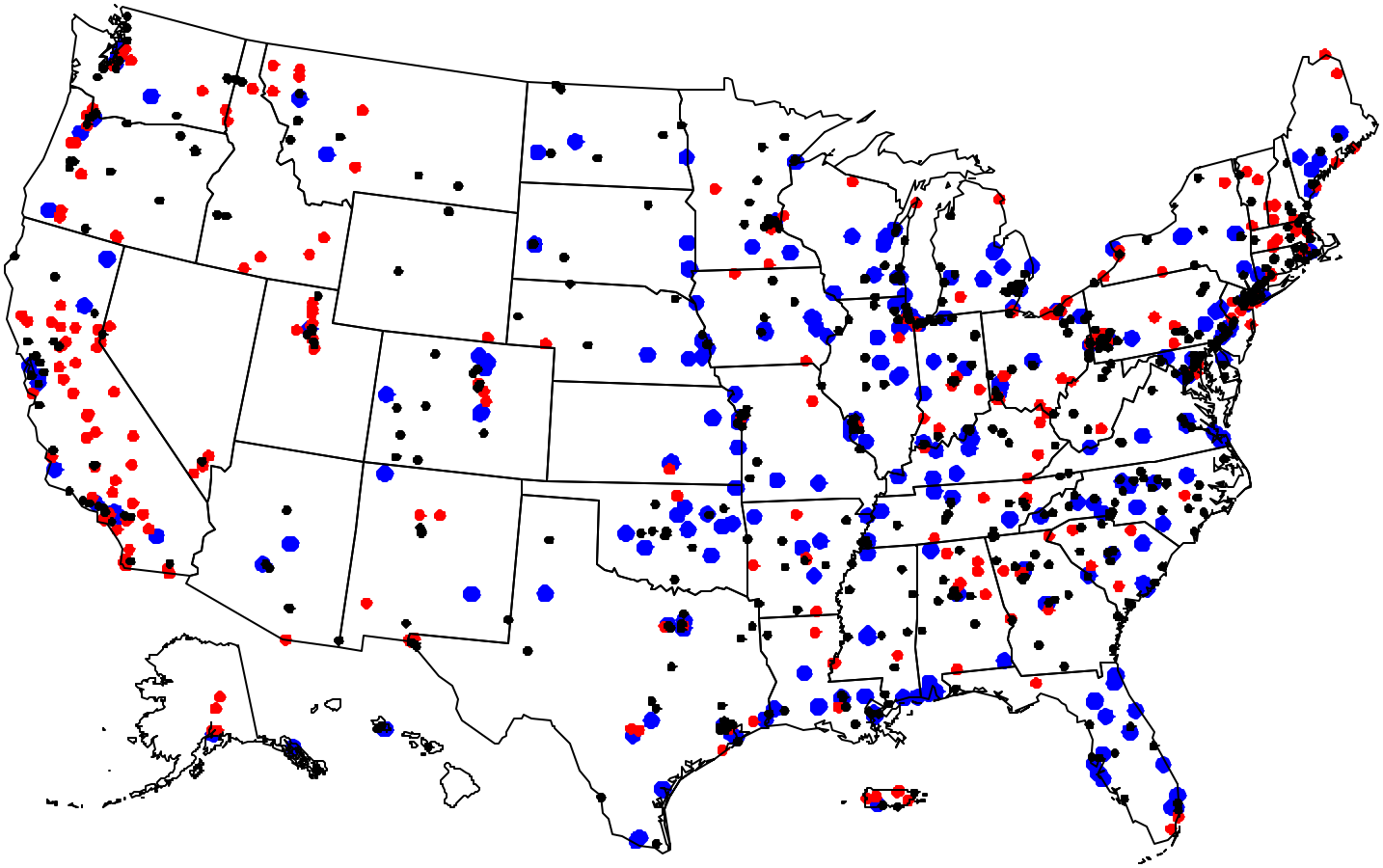
PM25 Annual Mean: Red=Large Value, Blue=Small Value

PM25 98th Percentile: Red=Large Value, Blue=Small Value



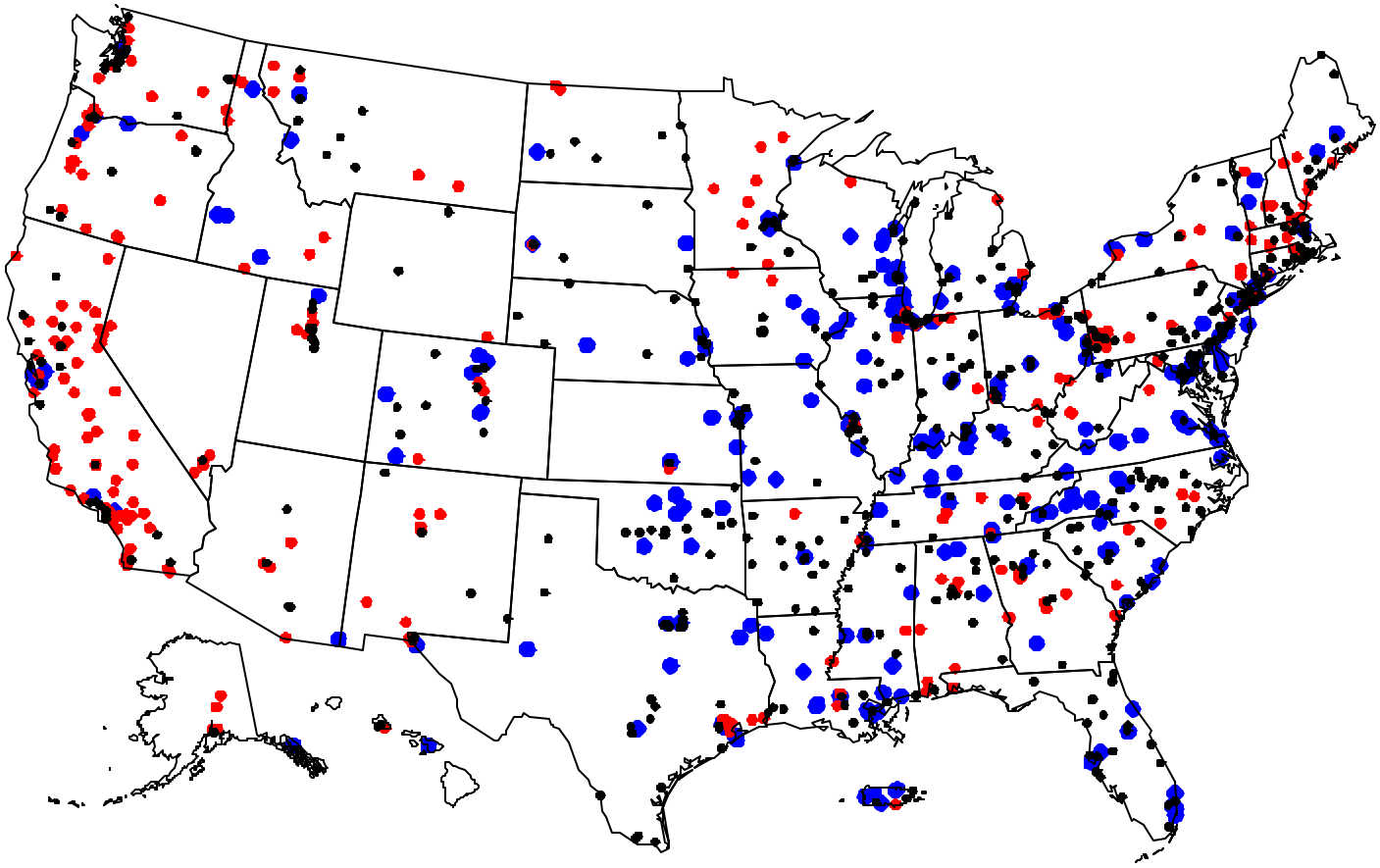
PM25 98th Percentile: Red=Large Value, Blue=Small Value

Predicting PM25 Annual Mean: Red=High Uncertainty, Blue=Low Uncertainty



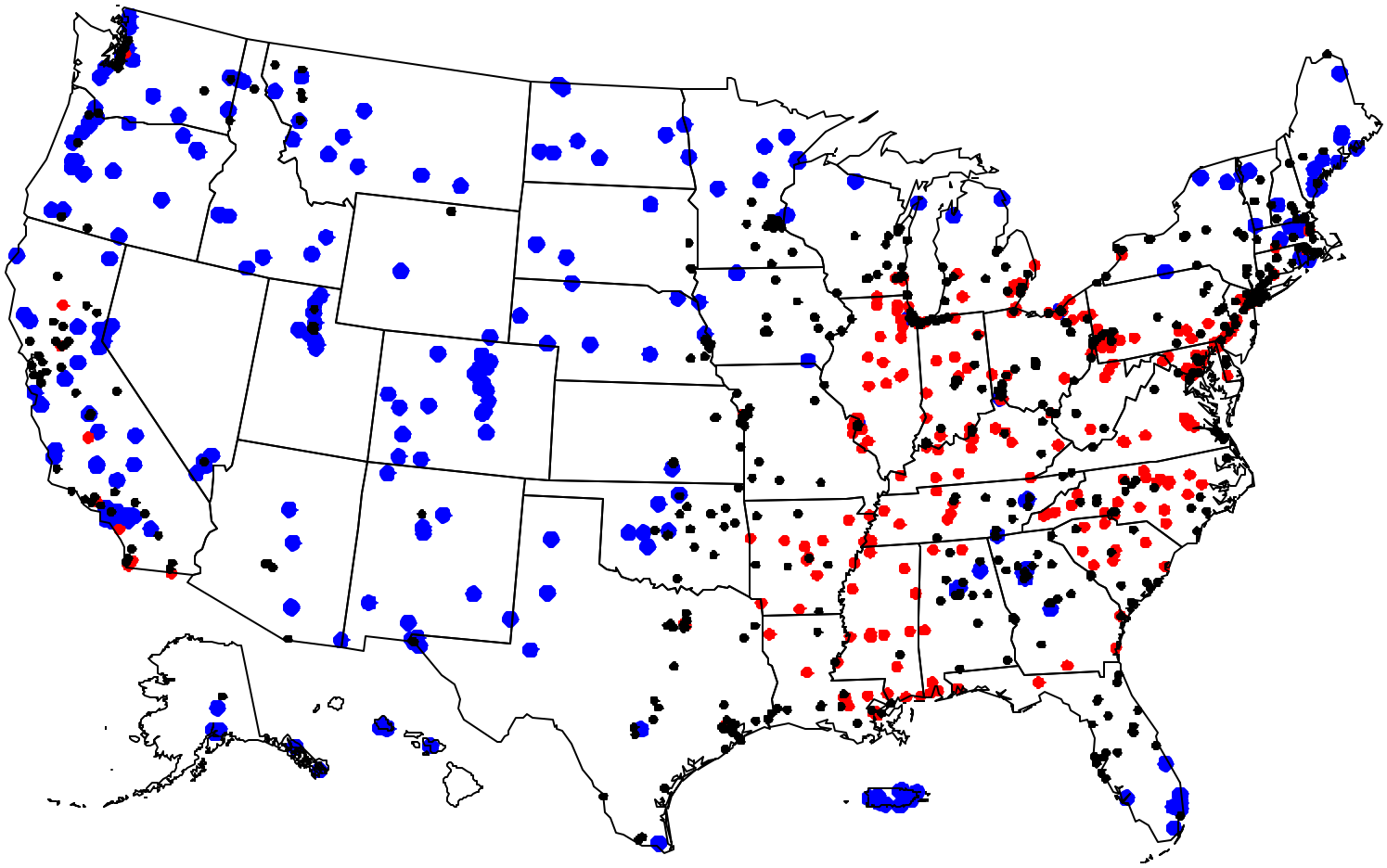
Predicting PM25 Annual Mean: Red=High Uncertainty, Blue=Low Uncertainty

Predicting PM25 98th Percentile: Red=High Uncertainty, Blue=Low Uncertainty



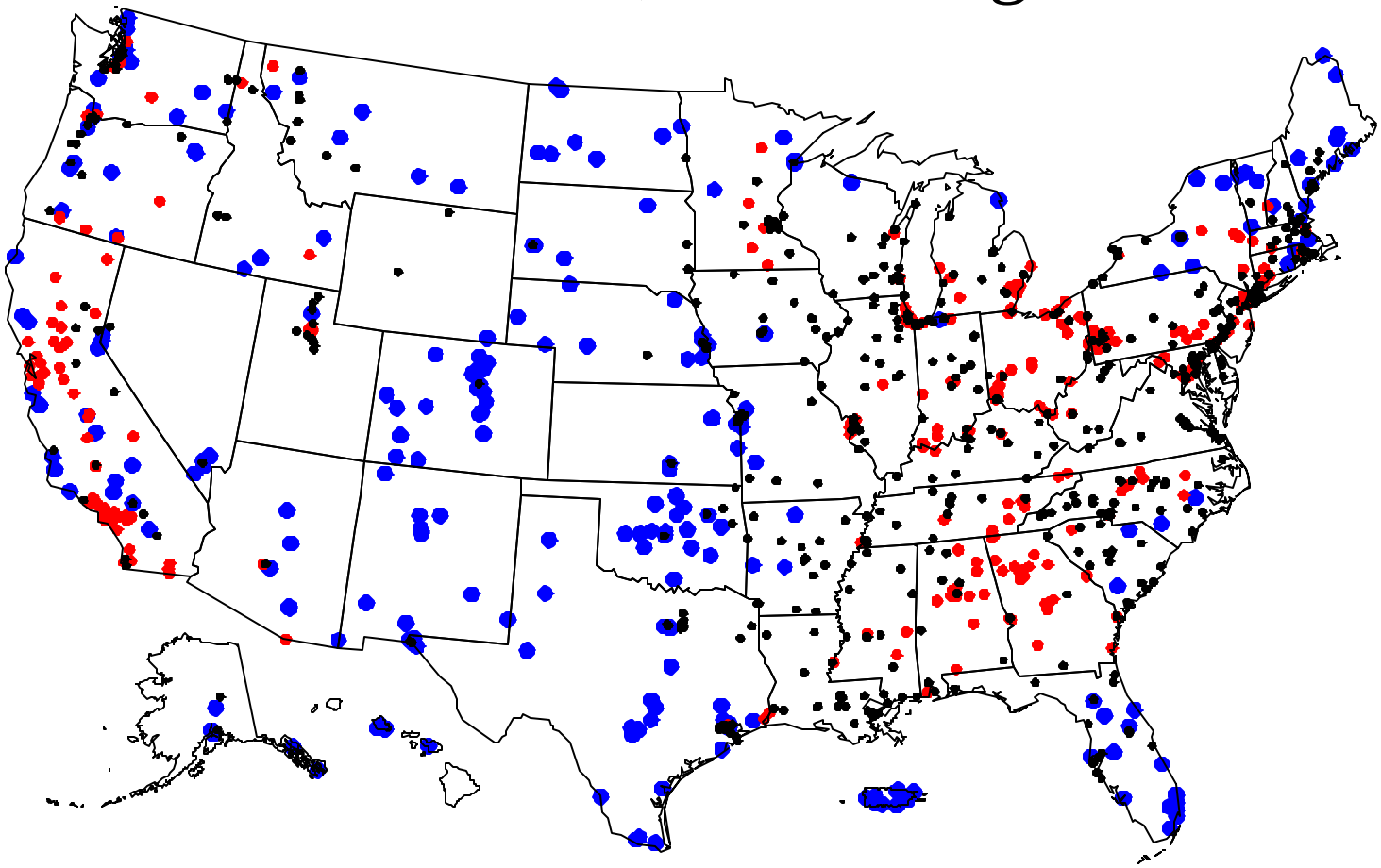
Predicting PM25 98th Percentile: Red=High Uncertainty, Blue=Low Uncertainty

Deviation from PM25 Annual Mean NAAQS: Red=Small Deviation, Blue=Large Deviation



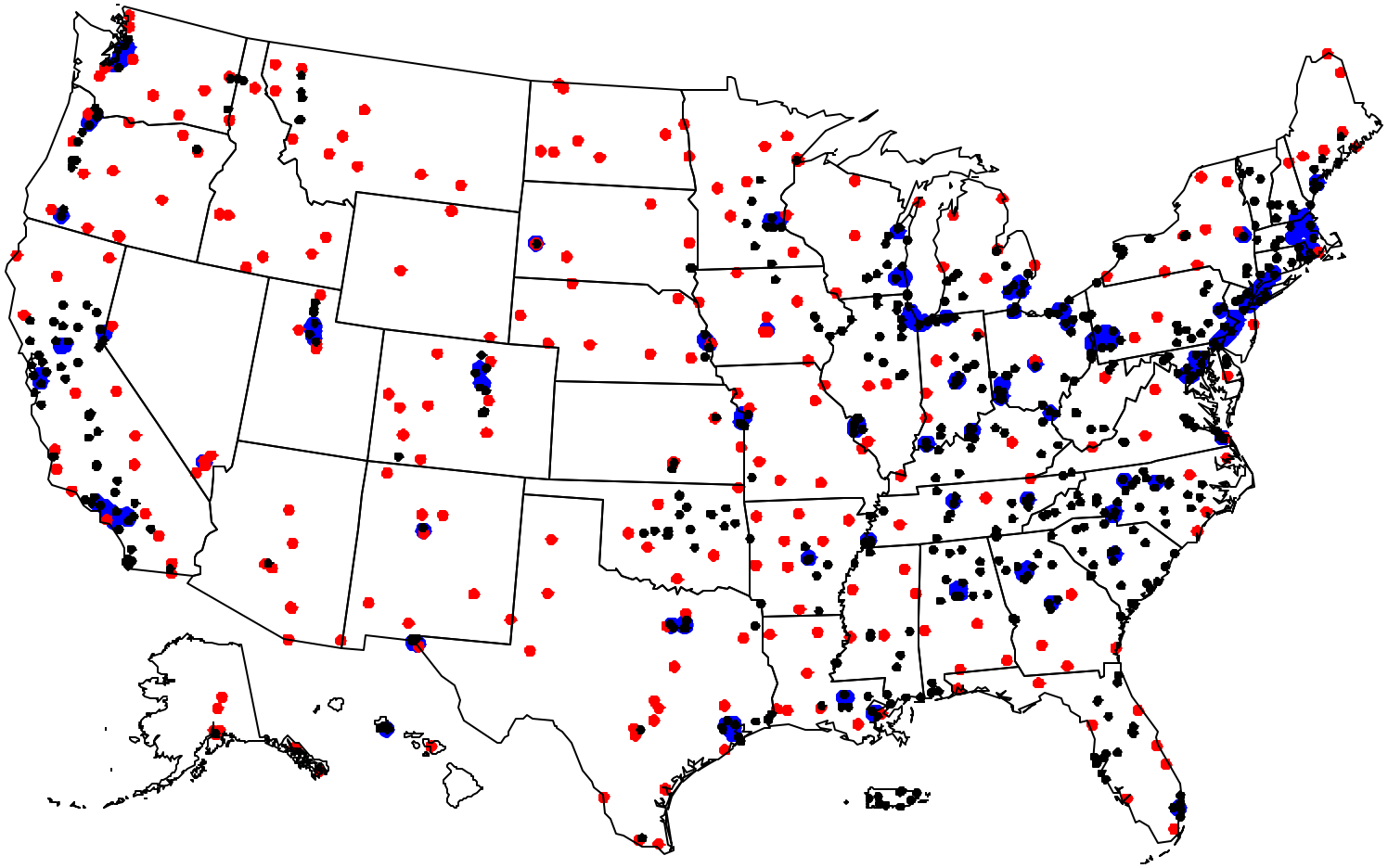
Deviation from PM25 Annual Mean NAAQS: Red=Small Deviation, Blue=Large Deviation

Deviation from PM25 98th Percentile NAAQS: Red=Small Deviation, Blue=Large Deviation



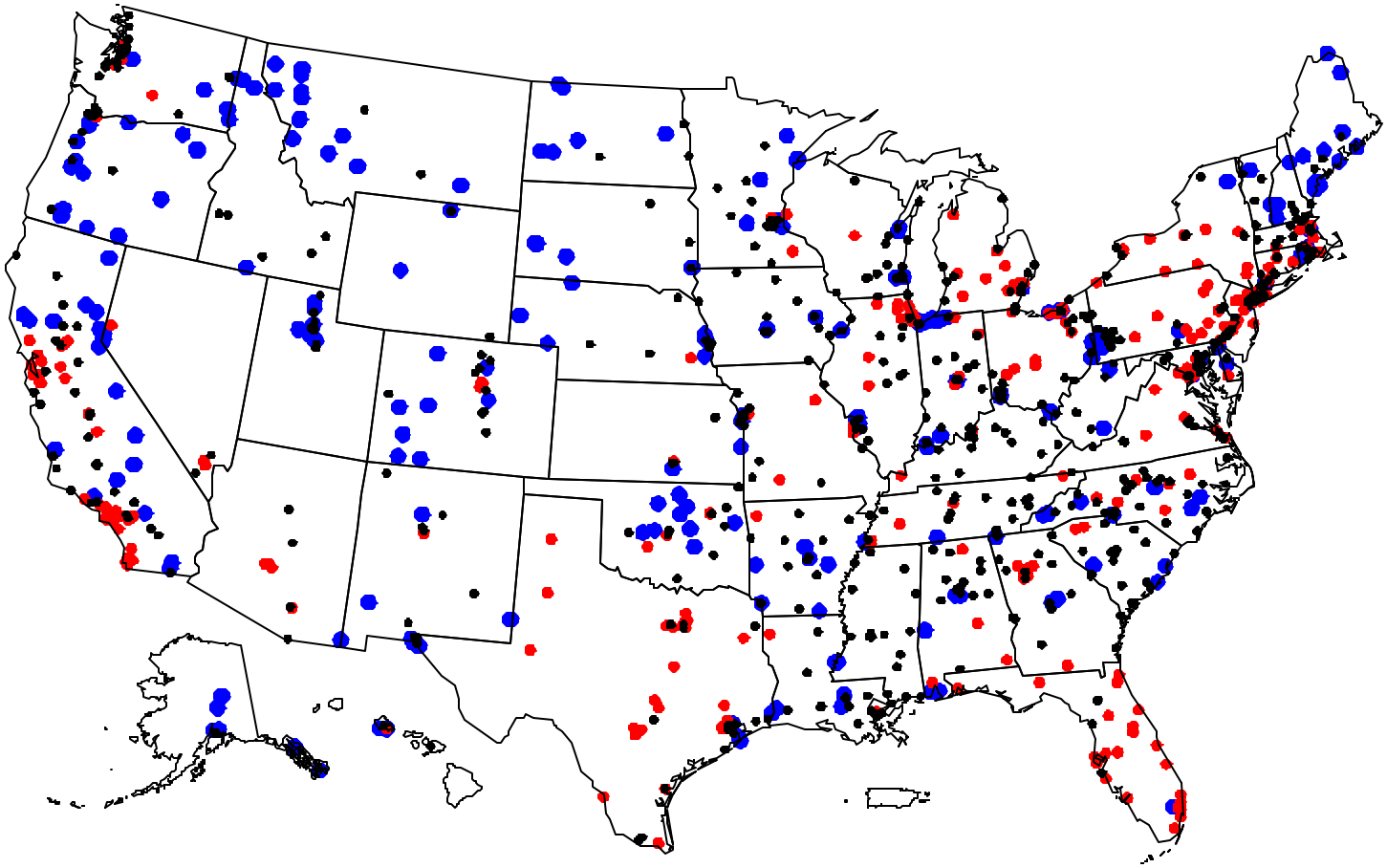
Deviation from PM25 98th Percentile NAAQS: Red=Small Deviation, Blue=Large Deviation

Area for PM25 Monitors: Red=Large Area, Blue=Small Area



Area for PM25 Monitors: Red=Large Area, Blue=Small Area

Population for PM25 Monitors: Red=Large Area, Blue=Small Area



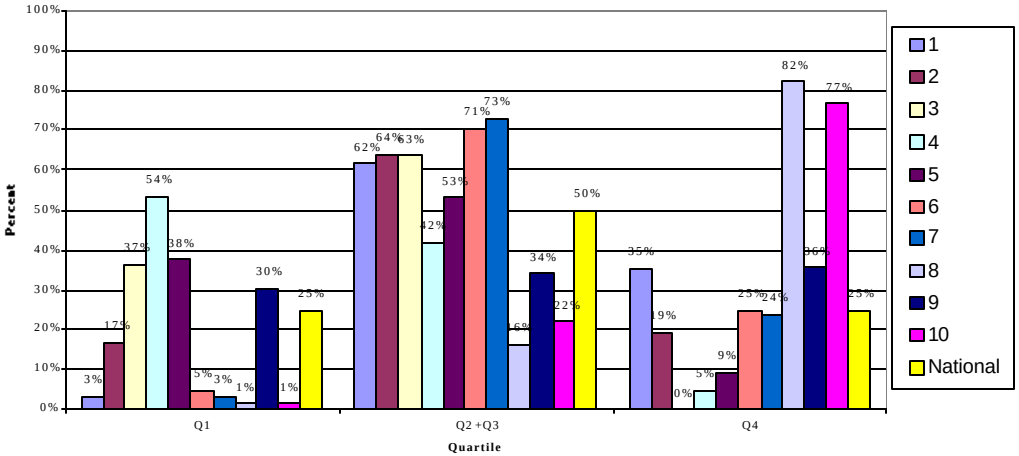
Population for PM25 Monitors: Red=Large Population, Blue=Small Population

PM25 Quartiles

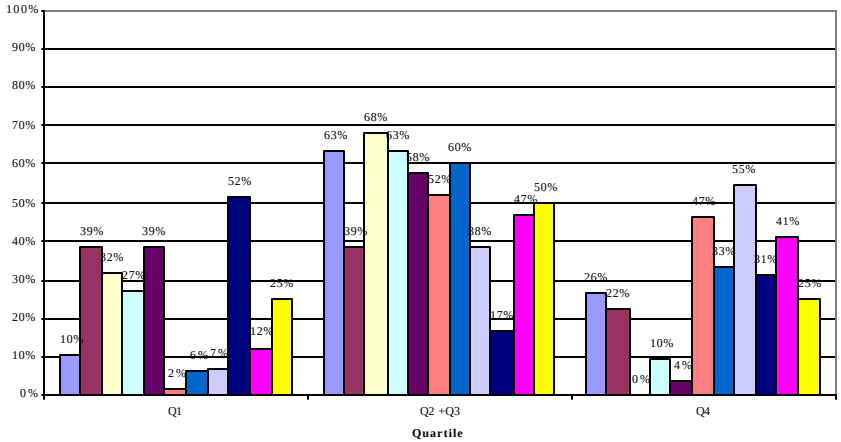
	PM25									
	pm25mean	% of NAAQS	98th percentile	% of NAAQS	pm25error	98th per. error	dif_NAAQS_mear	dif_NAAQS_98	area	population
Q1	15.5	103.3%	38	58.5%	1.75445	5.8182	1.2	28	9301	322779
Q3	10.4	69.3%	27	41.5%	0.4174	1.2032	4.95	38	1188	109192

Regional Percent of Sites in National Quartiles

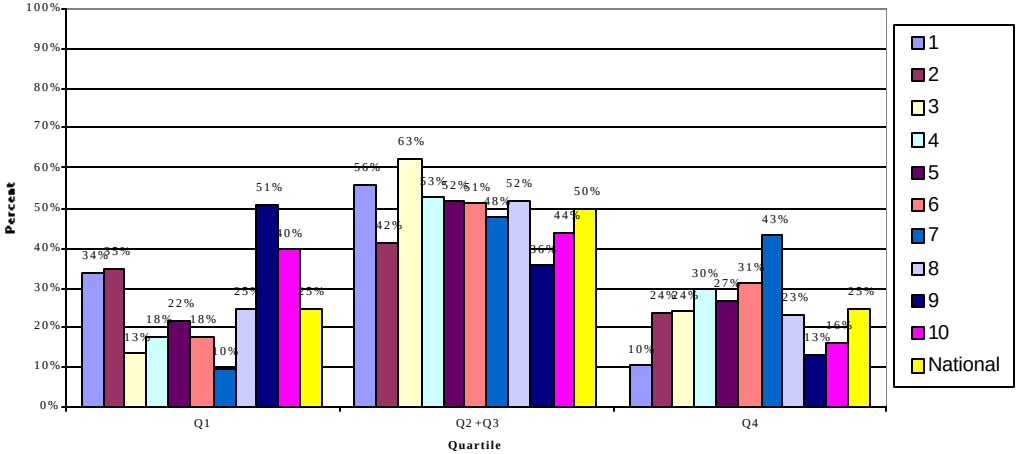
PM25 Annual Mean Concentration



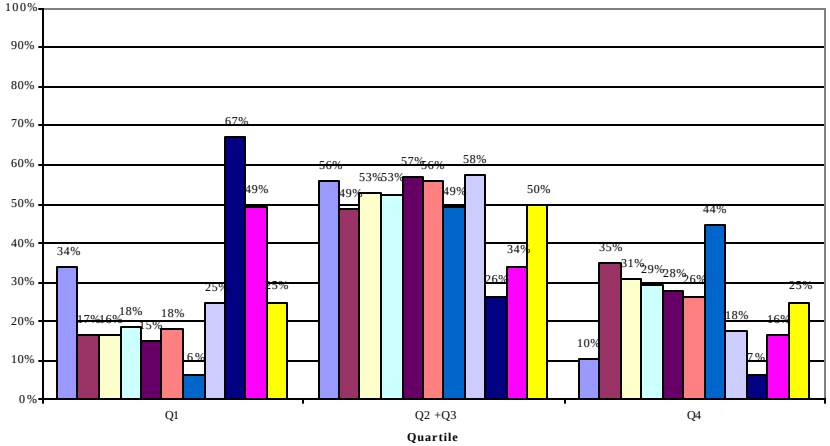
PM25 98th Percentile Concentration



PM25 Annual Mean Uncertainty

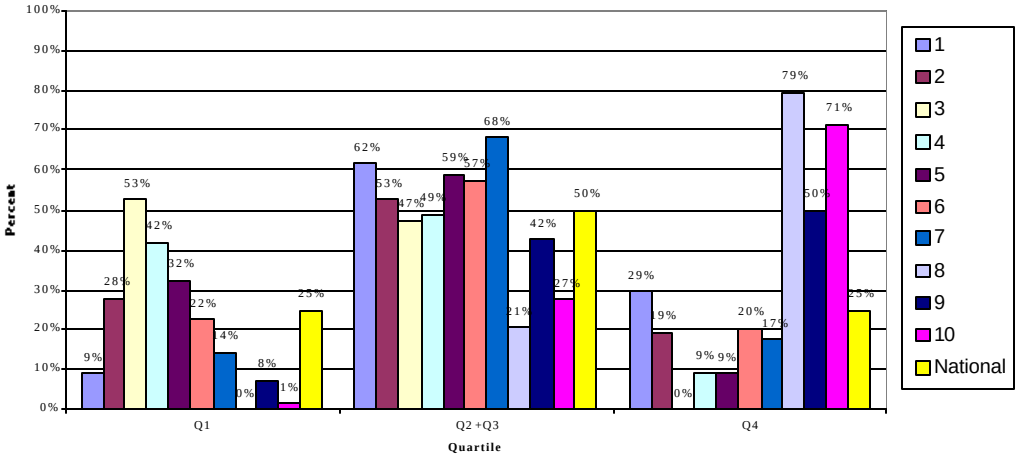


PM25 98th Percentile Uncertainty

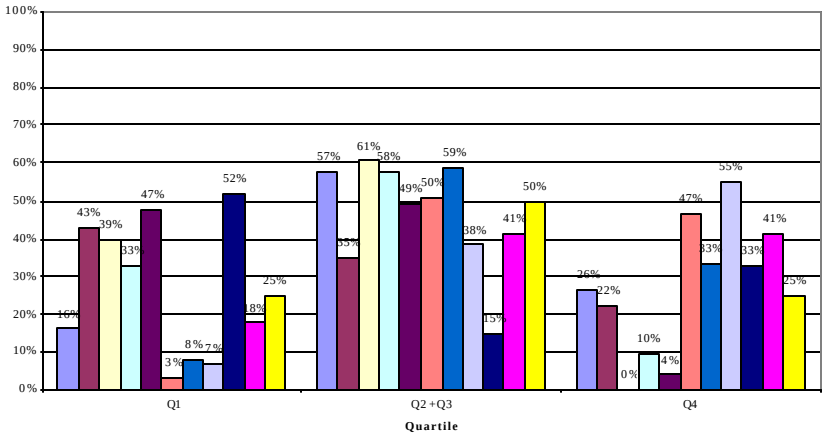


Regional Percent of Sites in National Quartiles

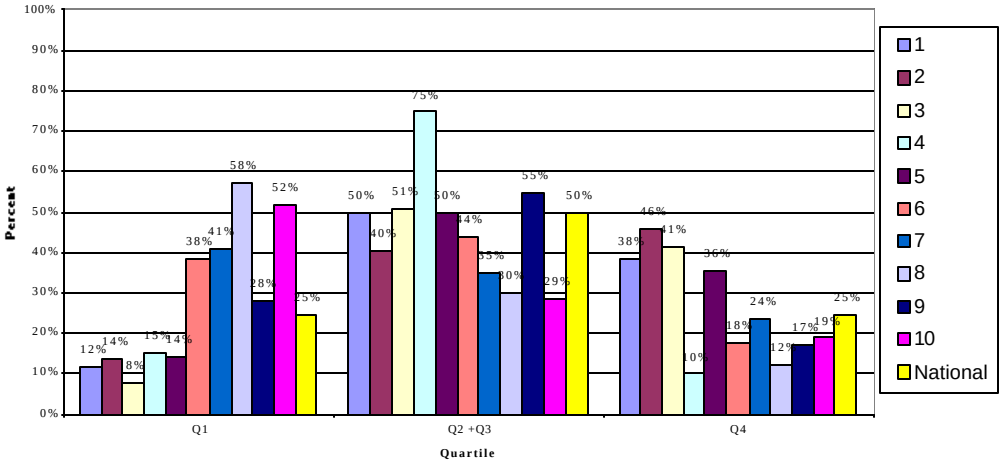
PM25 Annual Mean Deviation from NAAQS



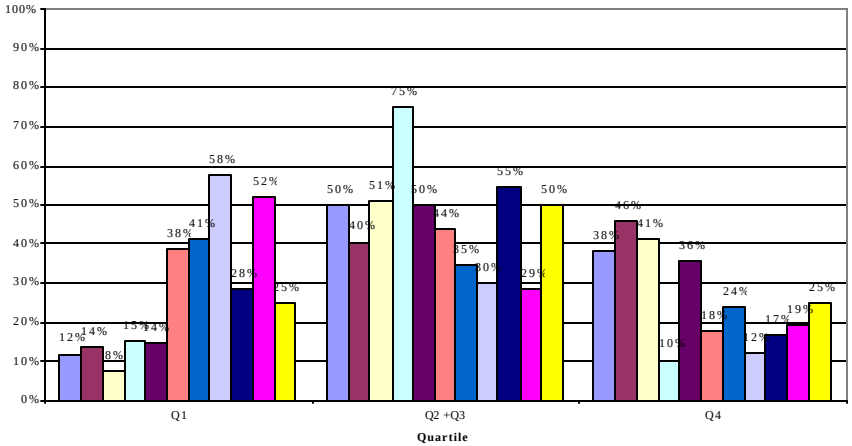
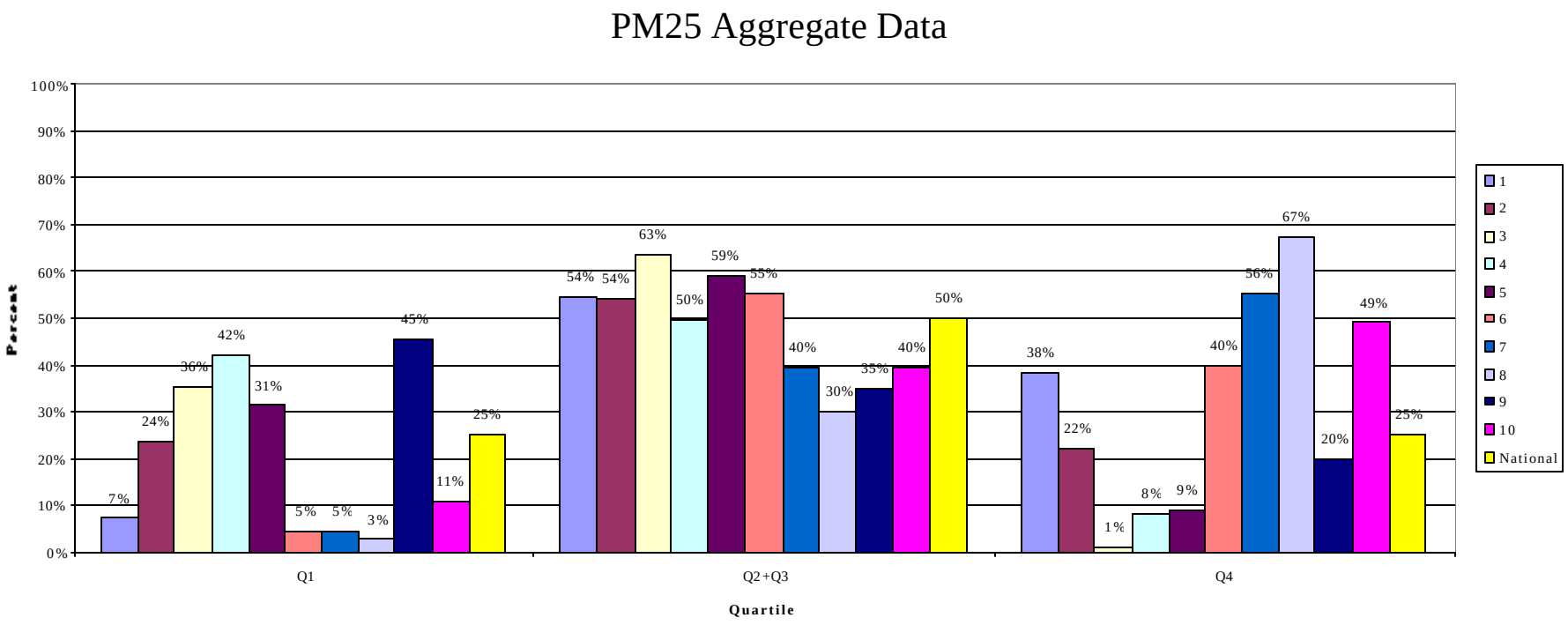
PM25 98th Percentile Deviation from NAAQS



PM25 Area



PM25 Population



Regional Percent of Sites in National Quartiles