Appendix D

Model Performance Evaluation

Model Performance Evaluation Displays

Spatial Maps Predicted and Observed 1-Hour and 8-Hour Ozone

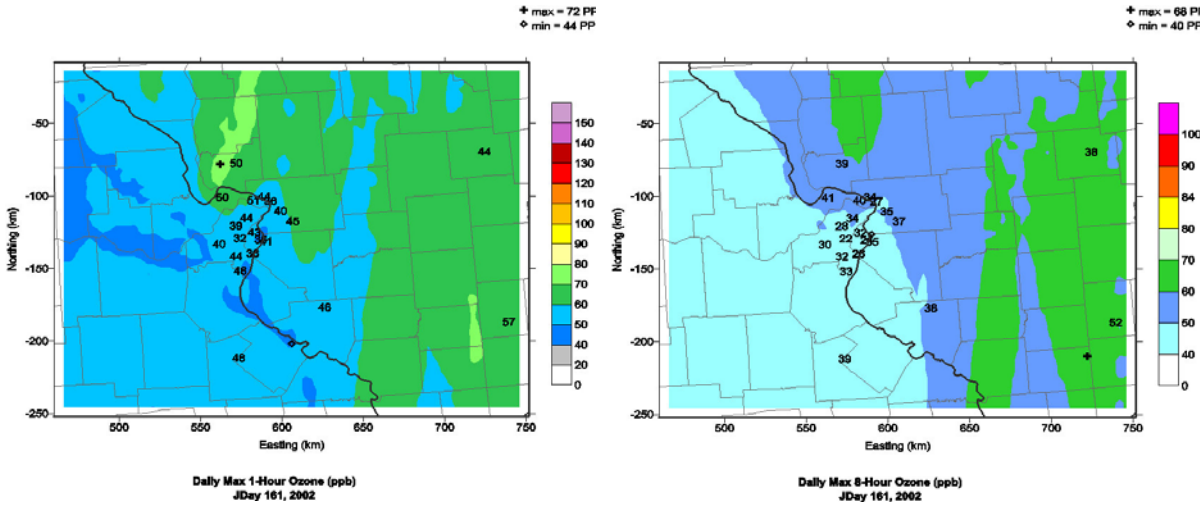


Figure D-1. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 10, 2002.

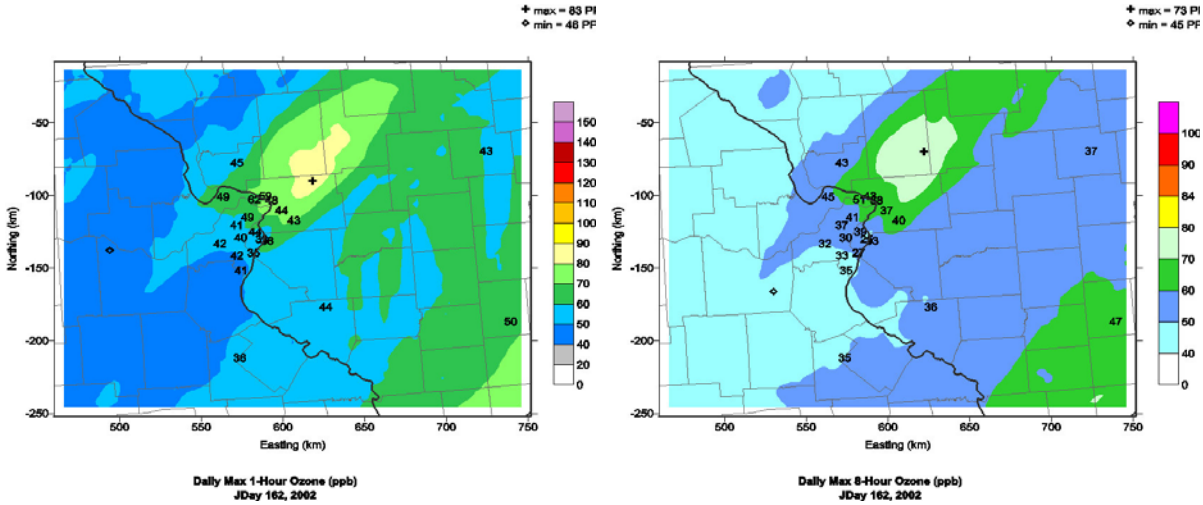


Figure D-2. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 11, 2002.

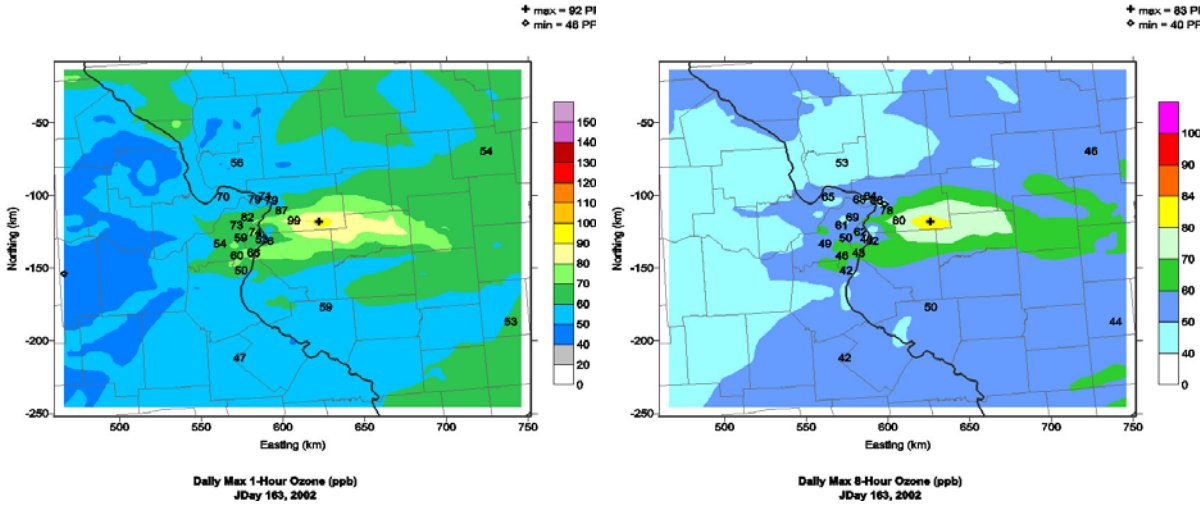


Figure D-3. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 12, 2002.

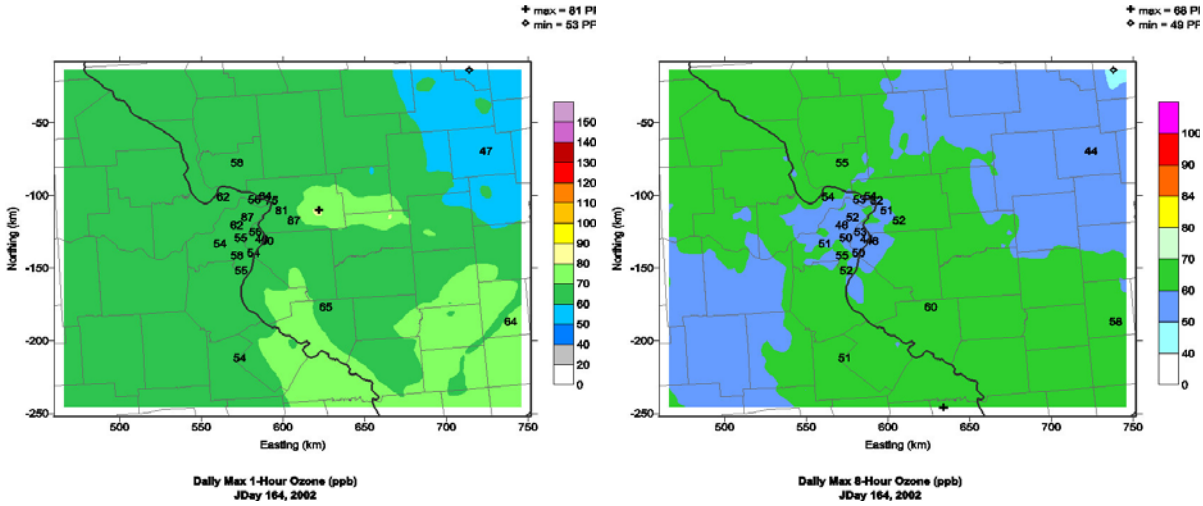


Figure D-4. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 13, 2002.

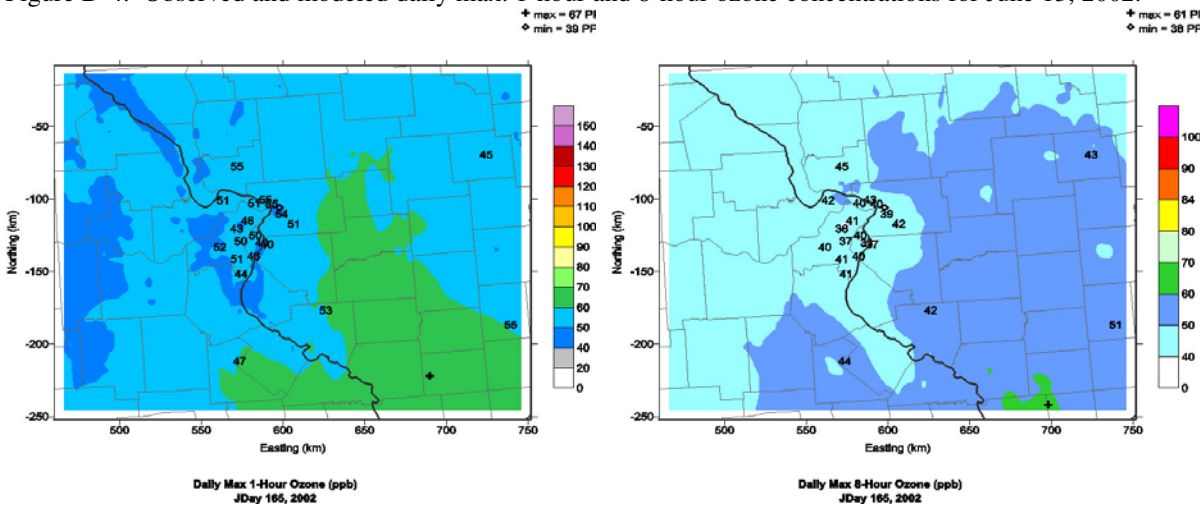


Figure D-5. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 14, 2002.

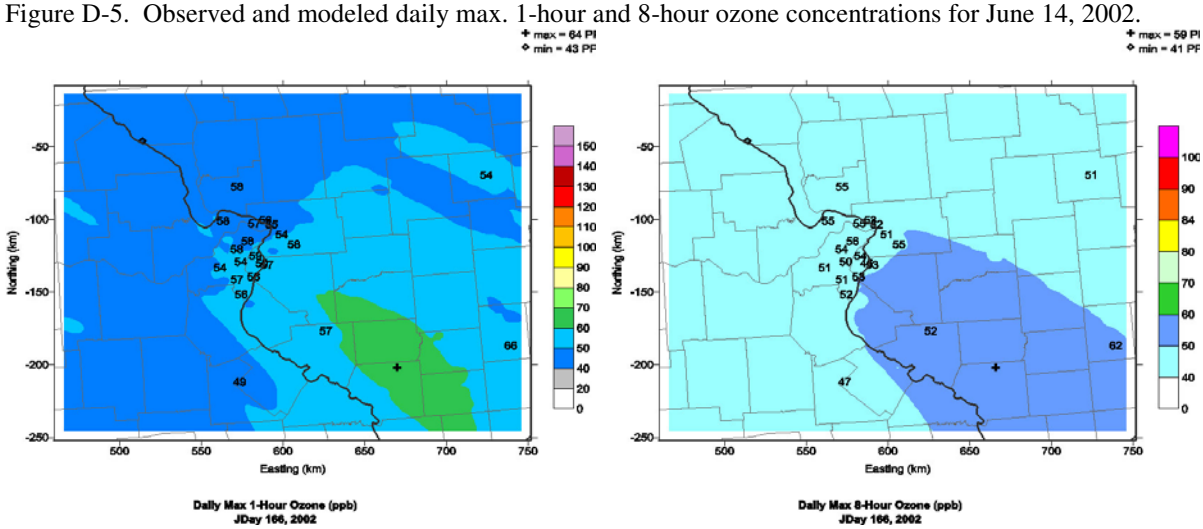


Figure D-6. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 15, 2002.

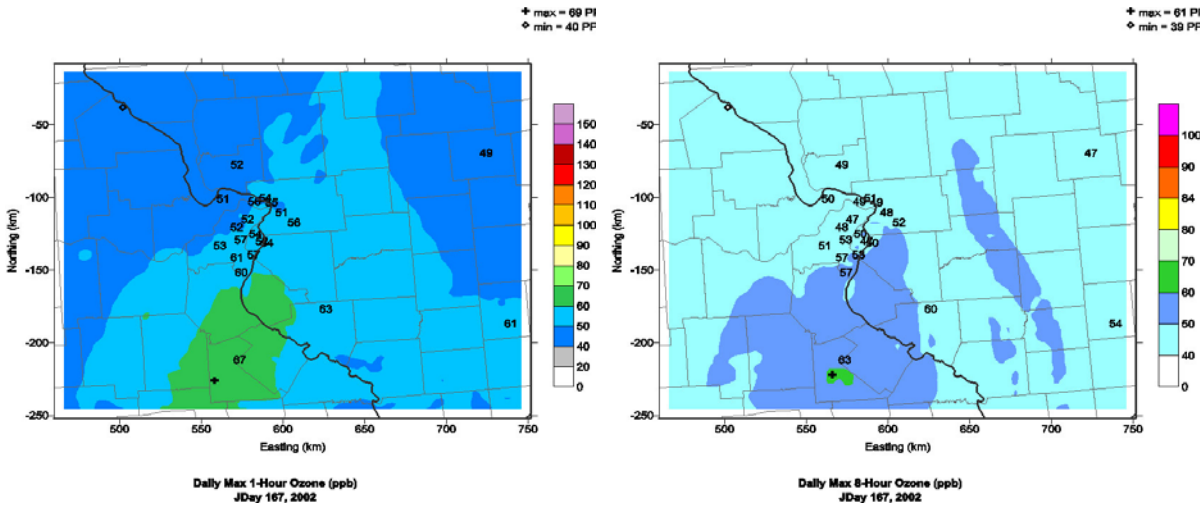


Figure D-7. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 16, 2002.

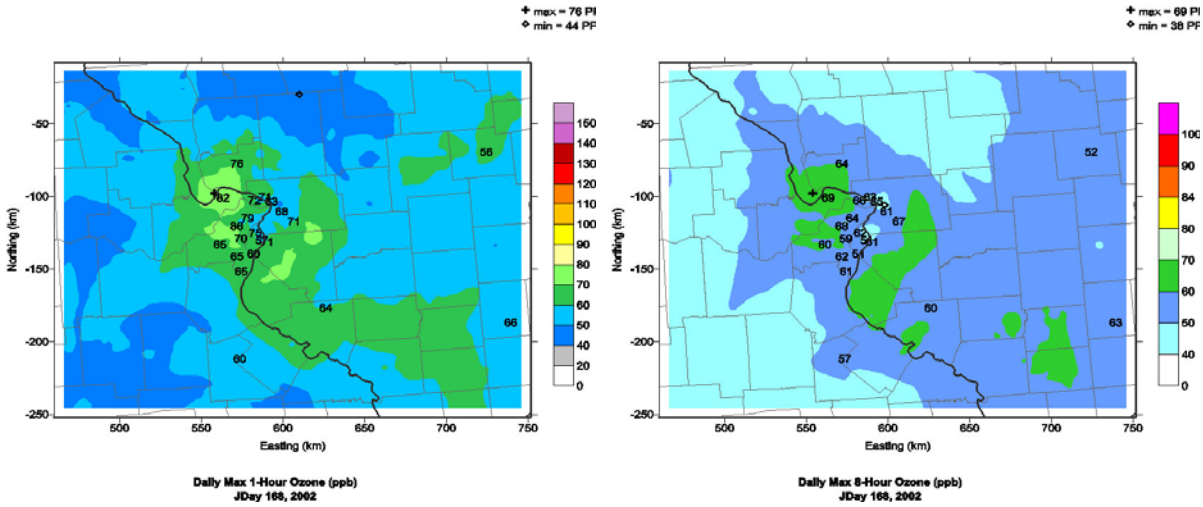


Figure D-8 Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 17, 2002.

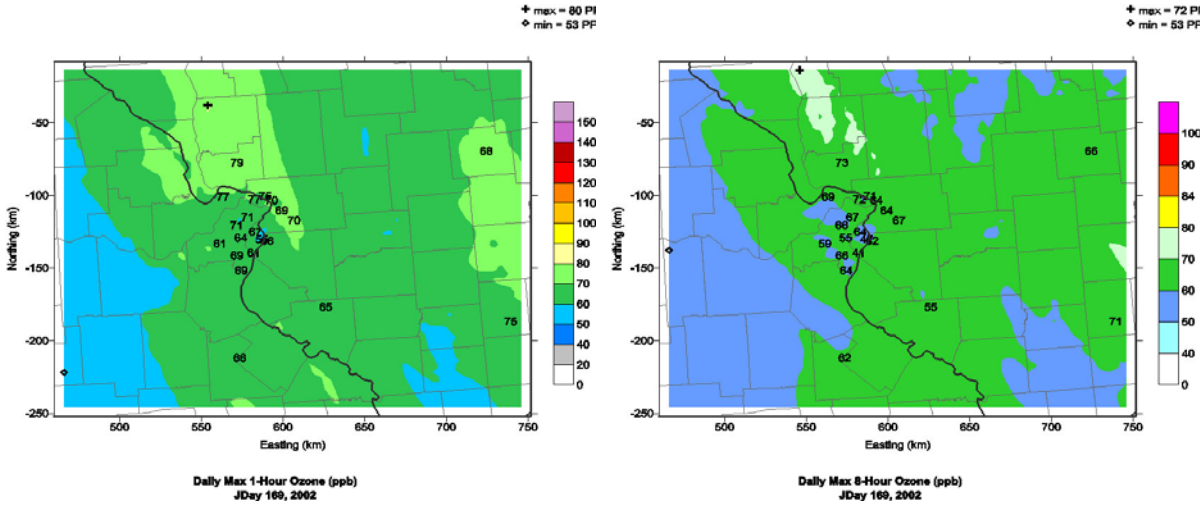


Figure D-9. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 18, 2002.

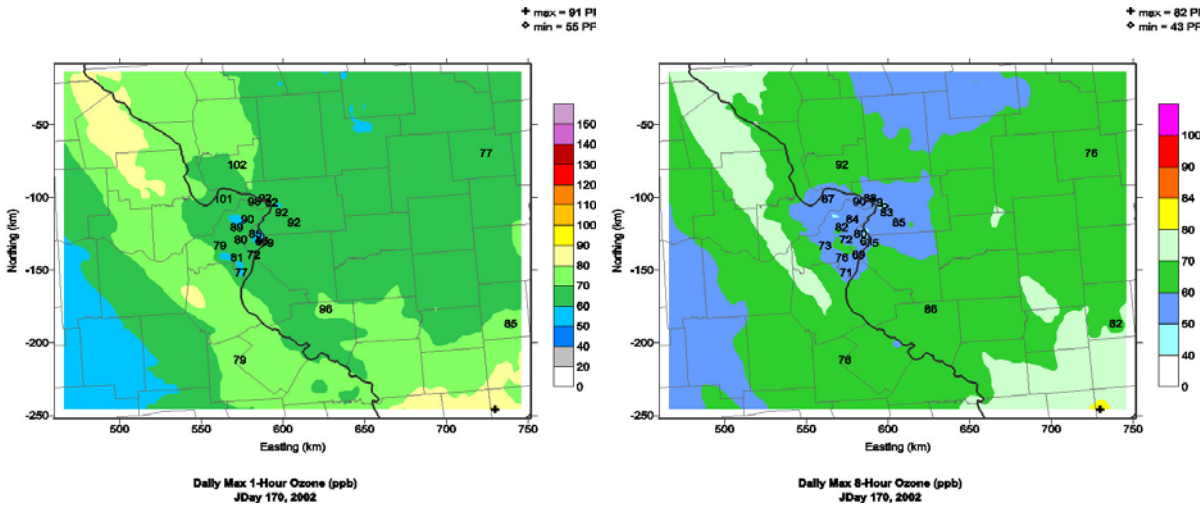


Figure D-10. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 19, 2002.

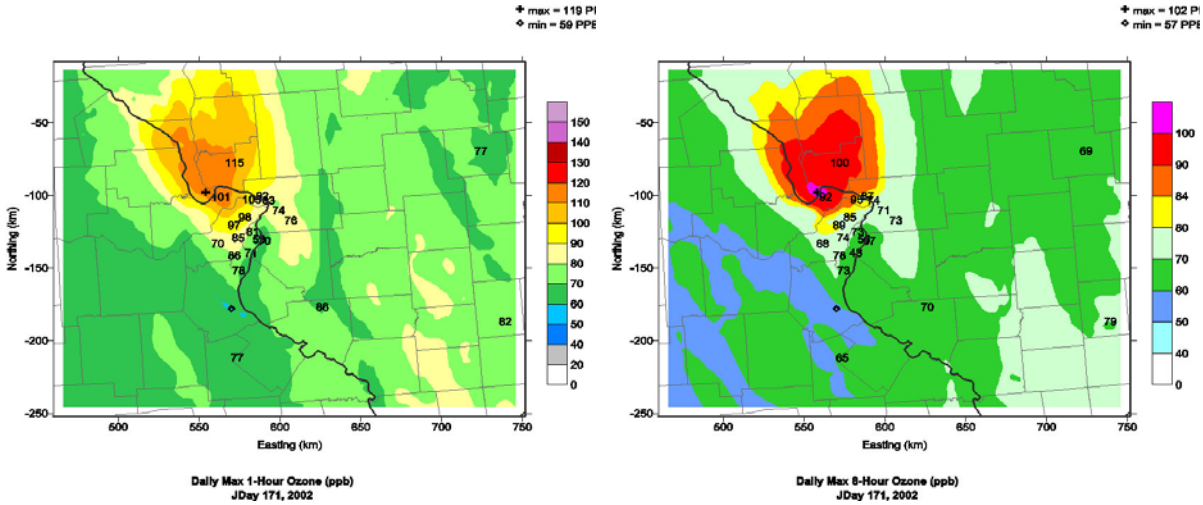


Figure D-11. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 20, 2002.

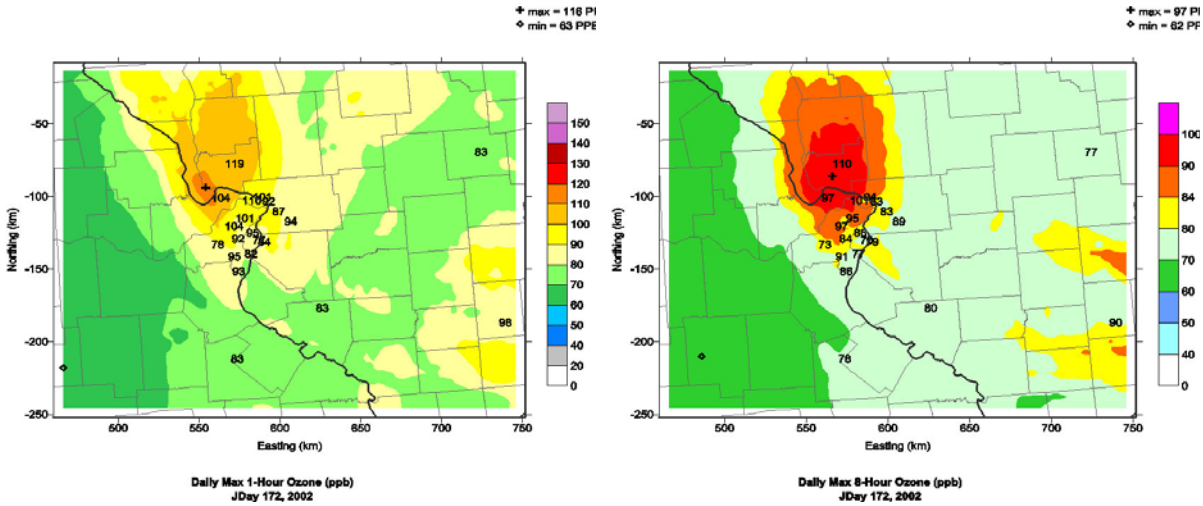


Figure D-12. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 21, 2002.

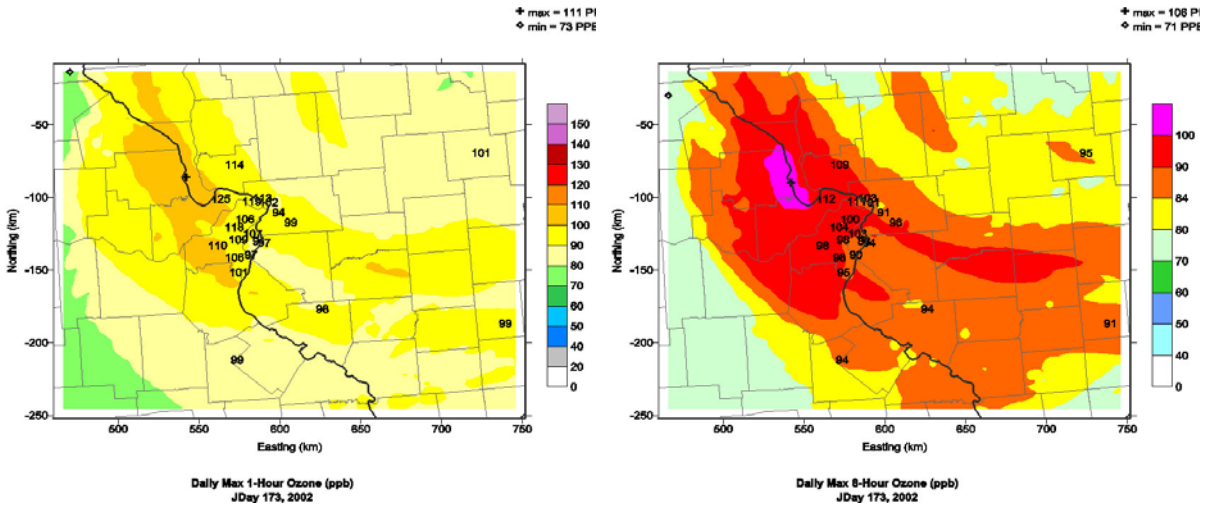


Figure D-13. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 22, 2002.

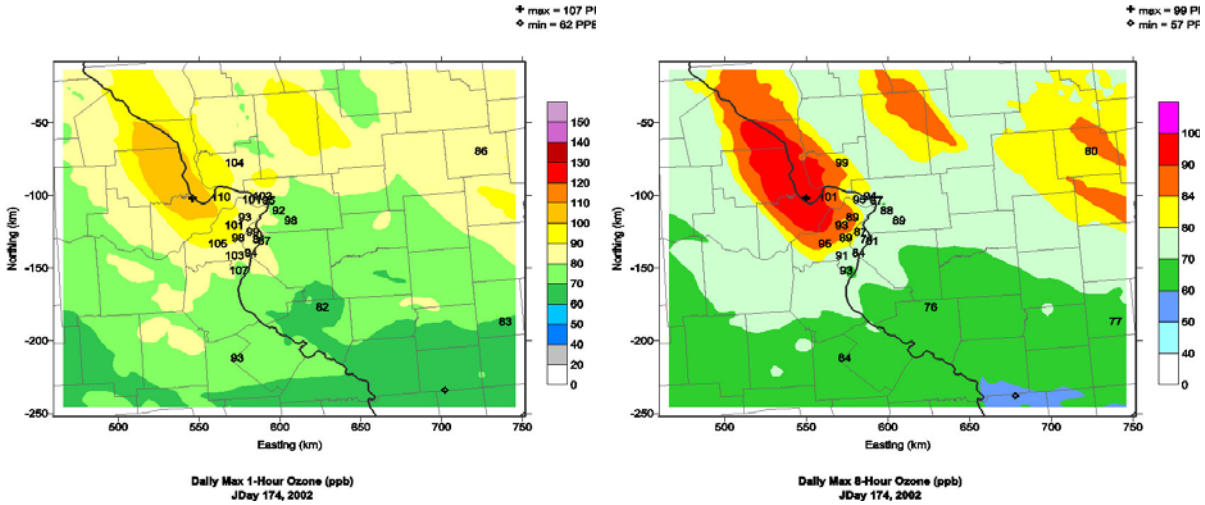


Figure D-14. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 23, 2002.

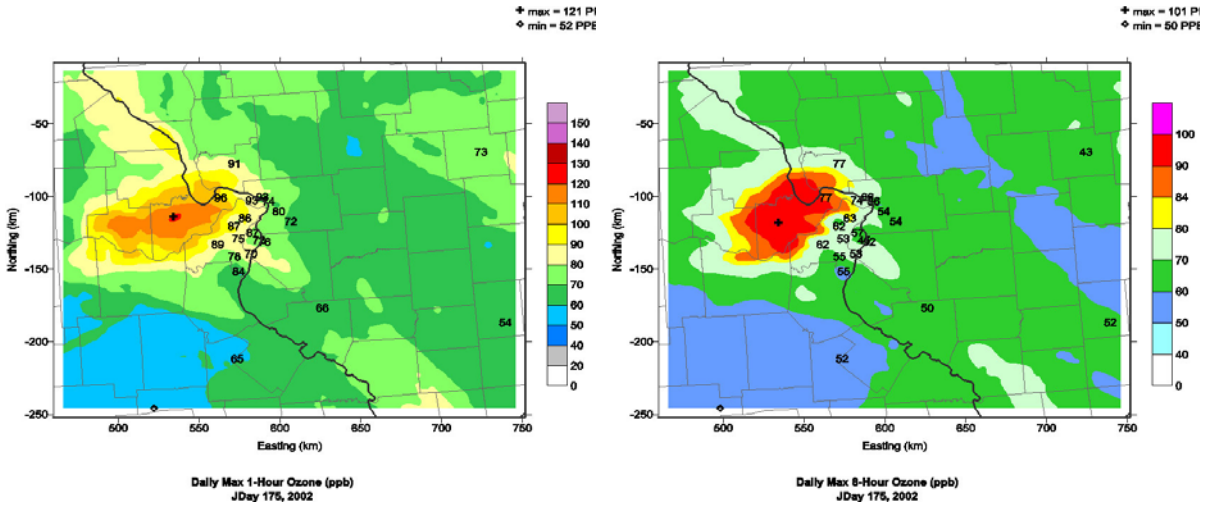


Figure D-15. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for June 24, 2002.

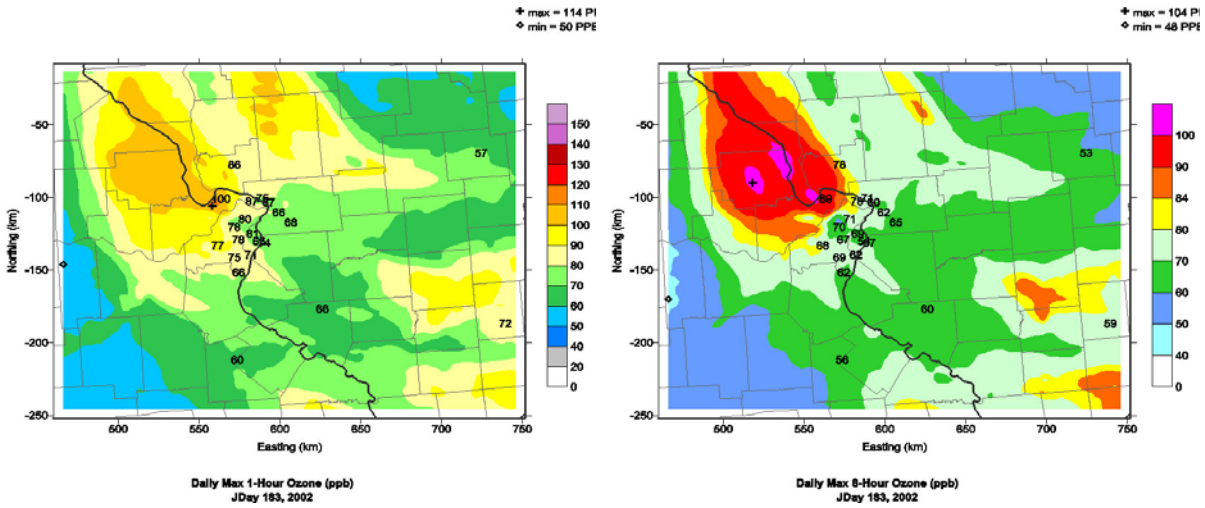


Figure D-16. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 2, 2002.

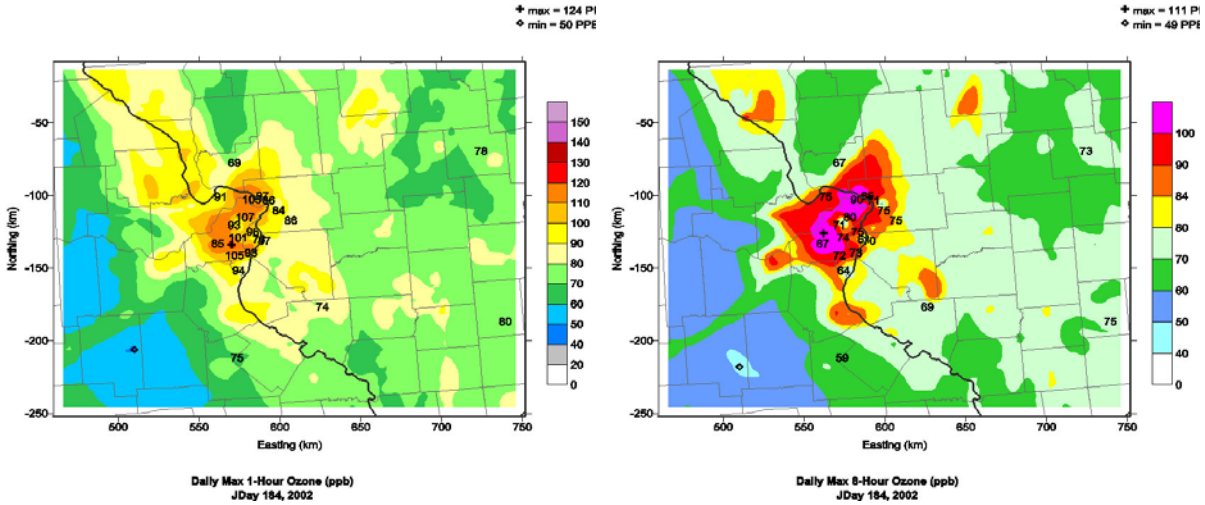


Figure D-17. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 3, 2002.

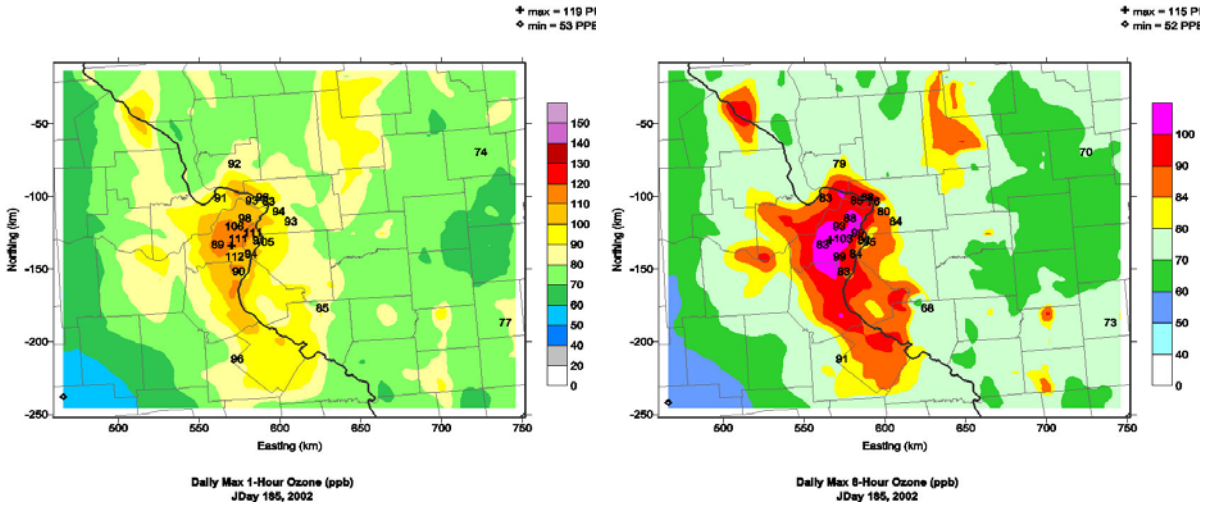


Figure D-18. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 4, 2002.

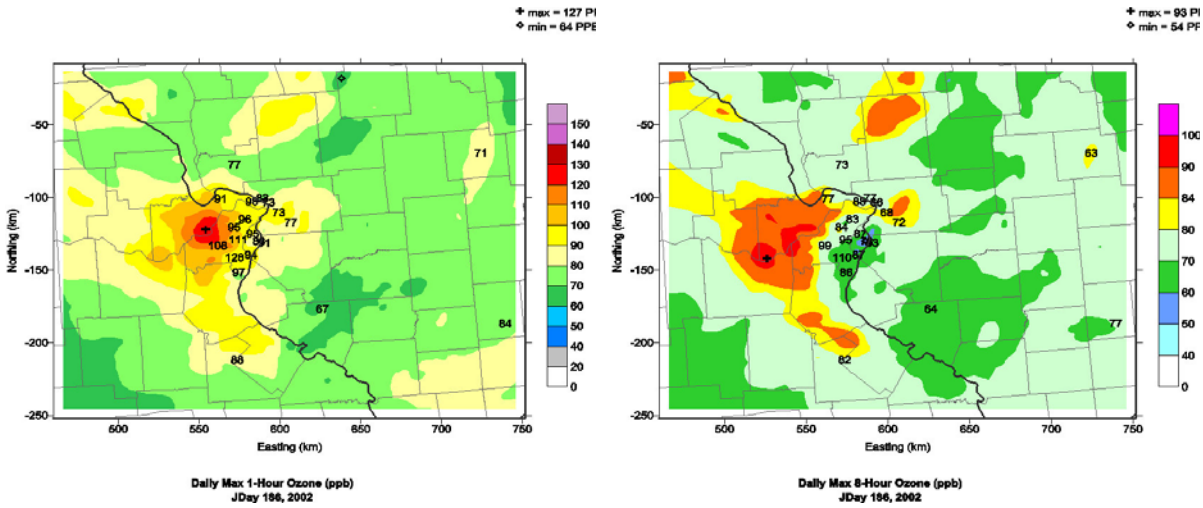


Figure D-19. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 5, 2002.

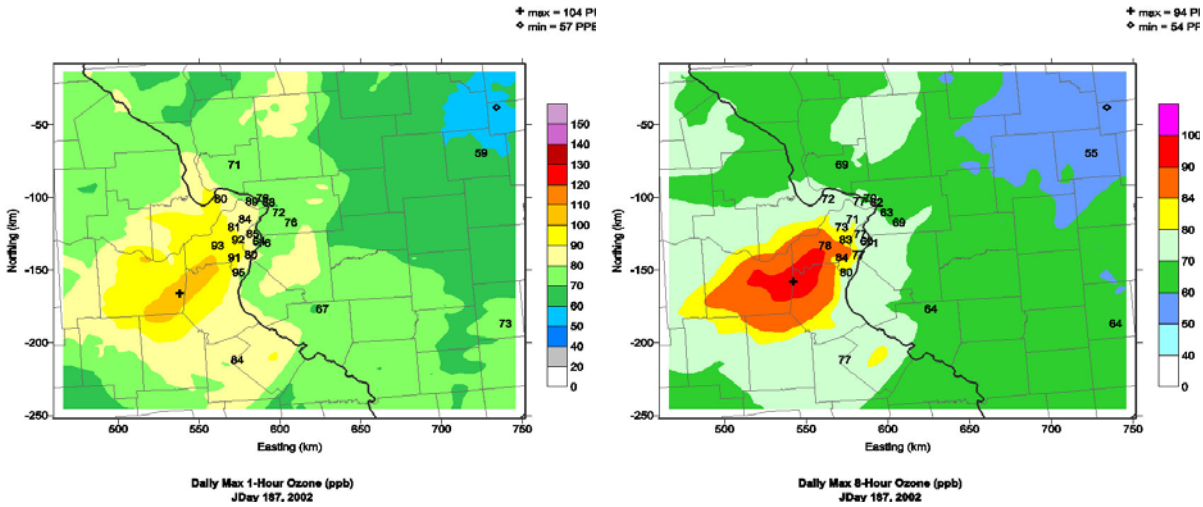


Figure D-20. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 6, 2002.

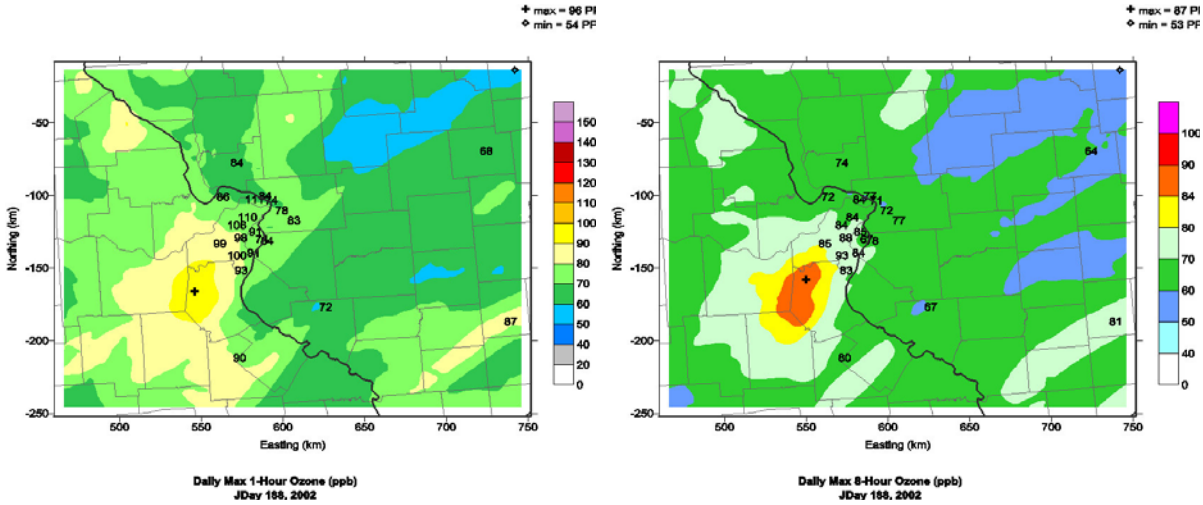


Figure D-21. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 7, 2002.

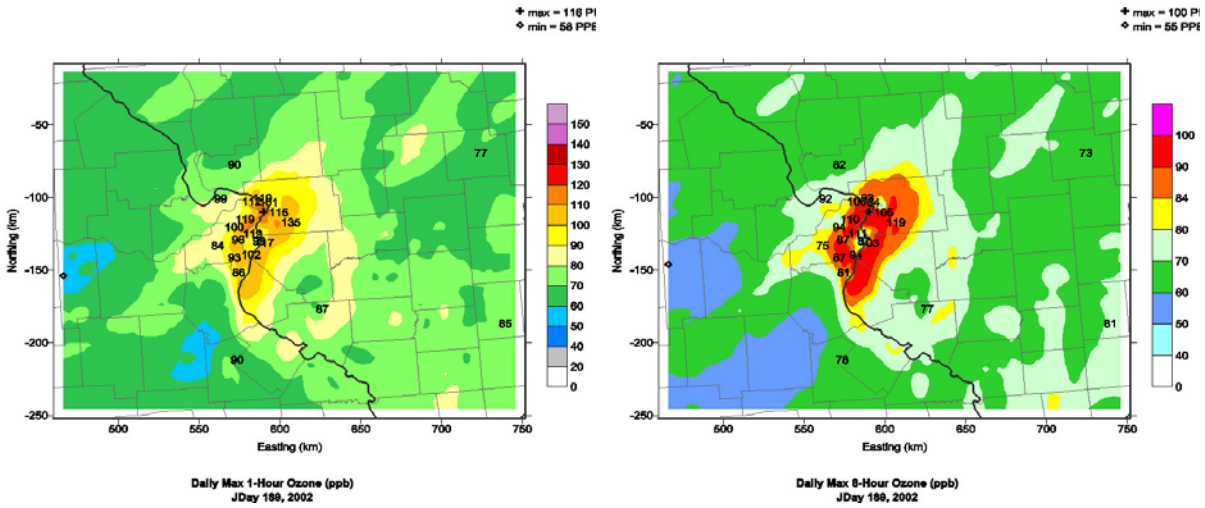


Figure D-22. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 8, 2002.

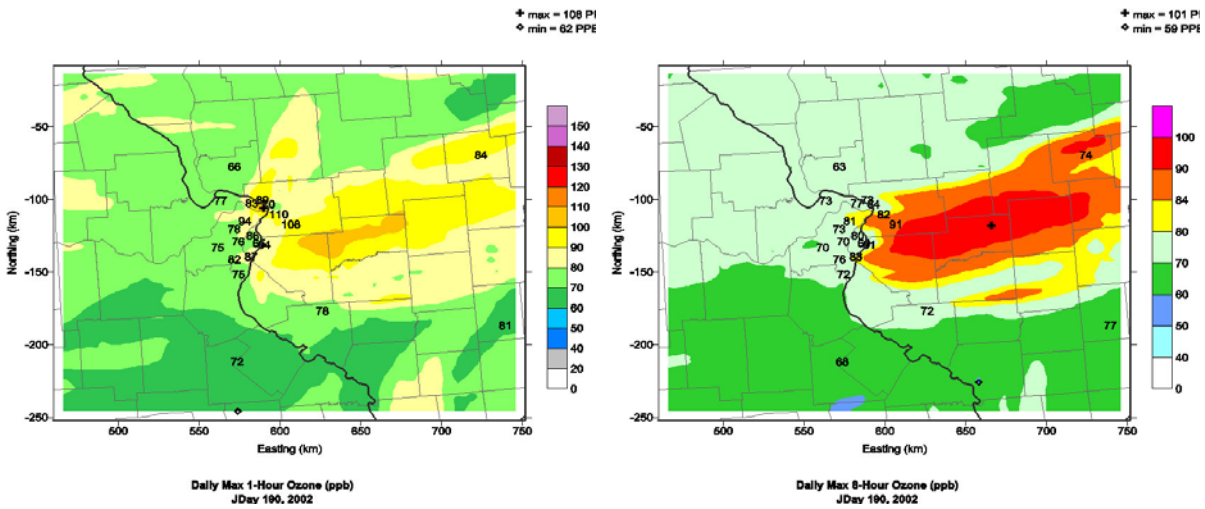


Figure D-23. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 9, 2002.

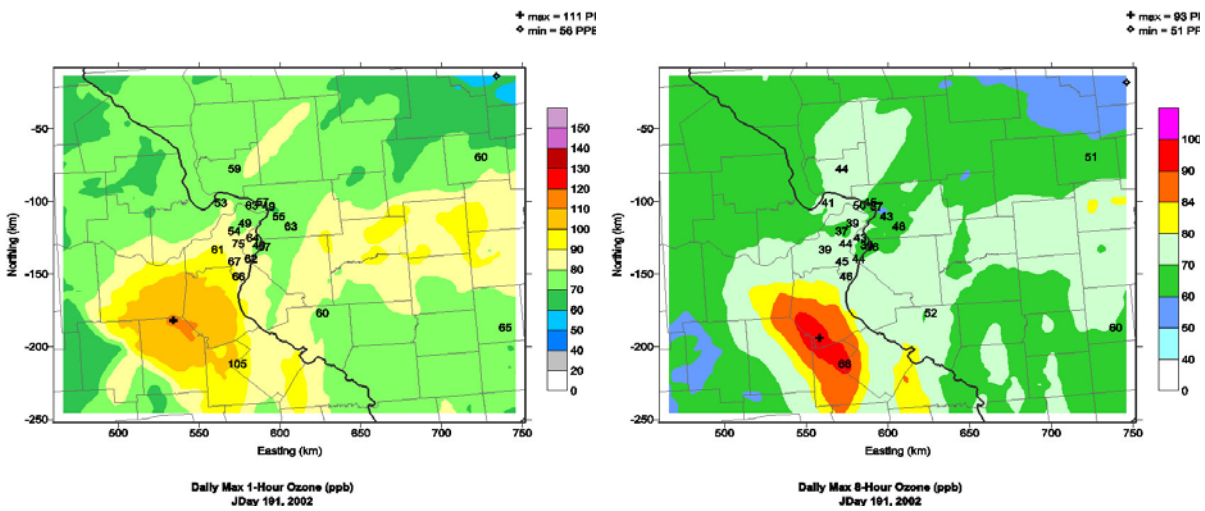


Figure D-24. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 10, 2002.

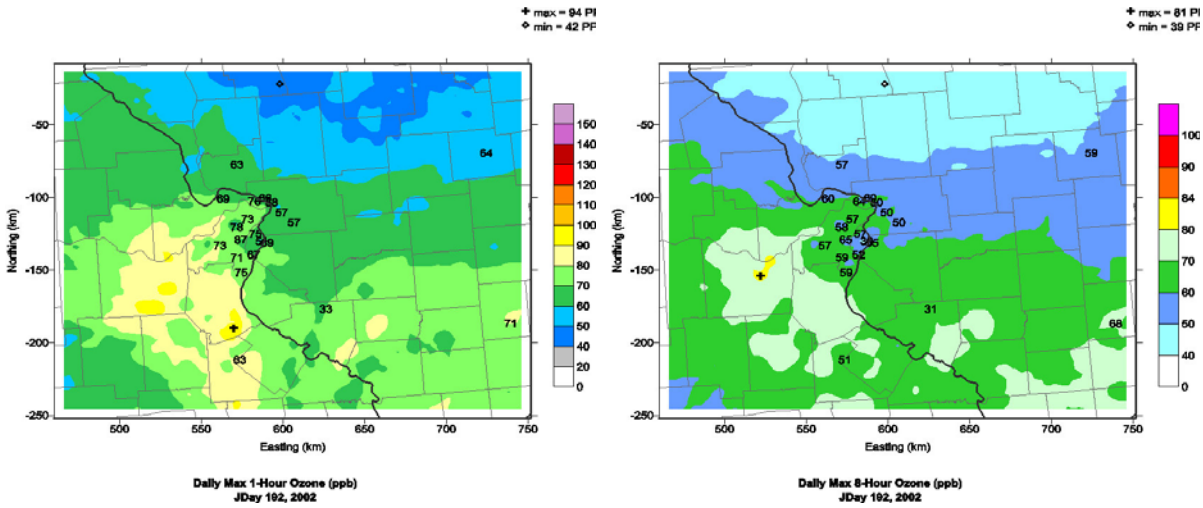


Figure D-25. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 11, 2002.

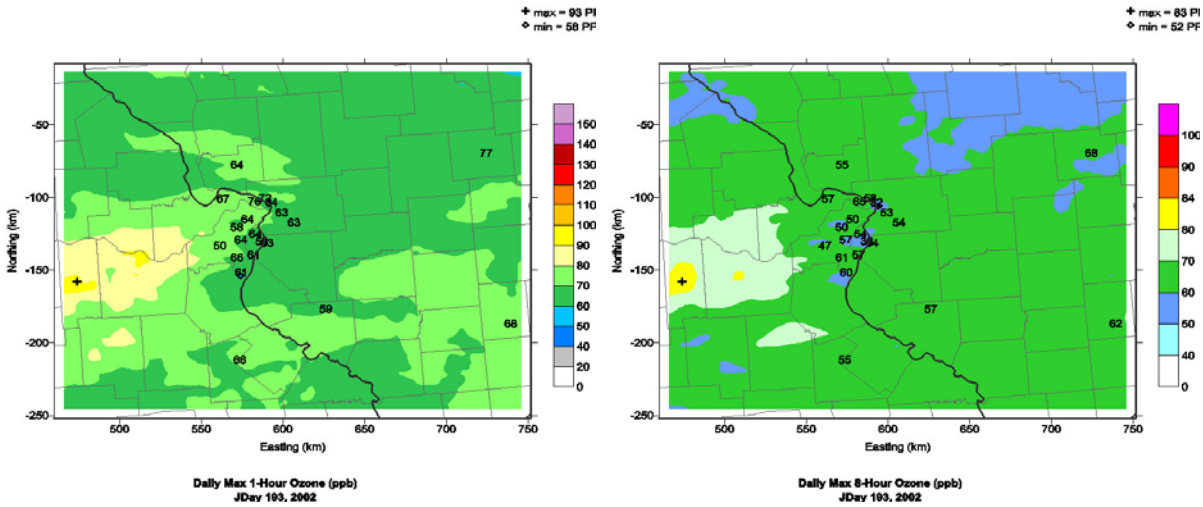


Figure D-26. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 12, 2002.

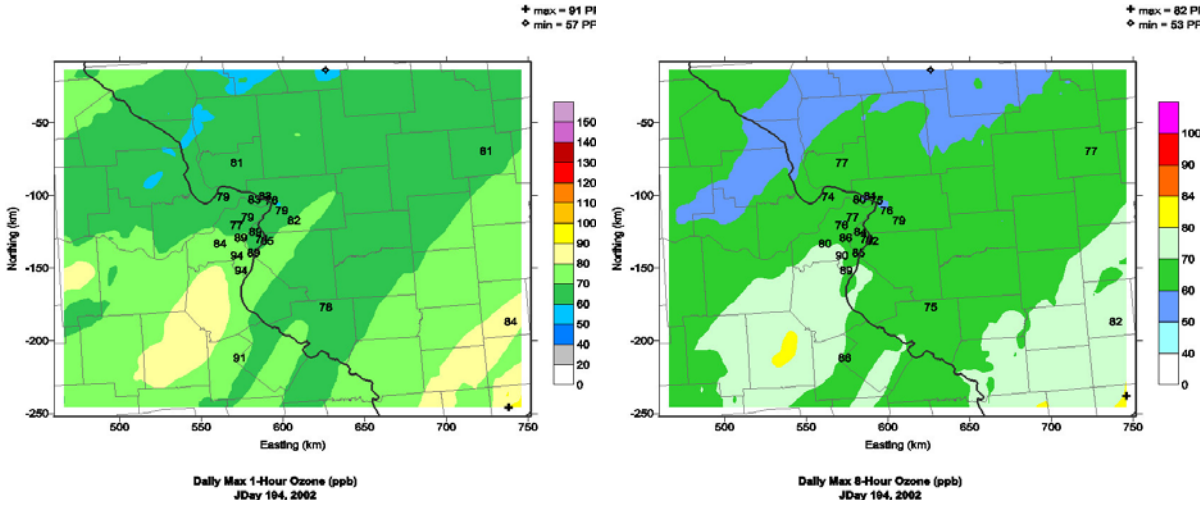


Figure D-27. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 13, 2002.

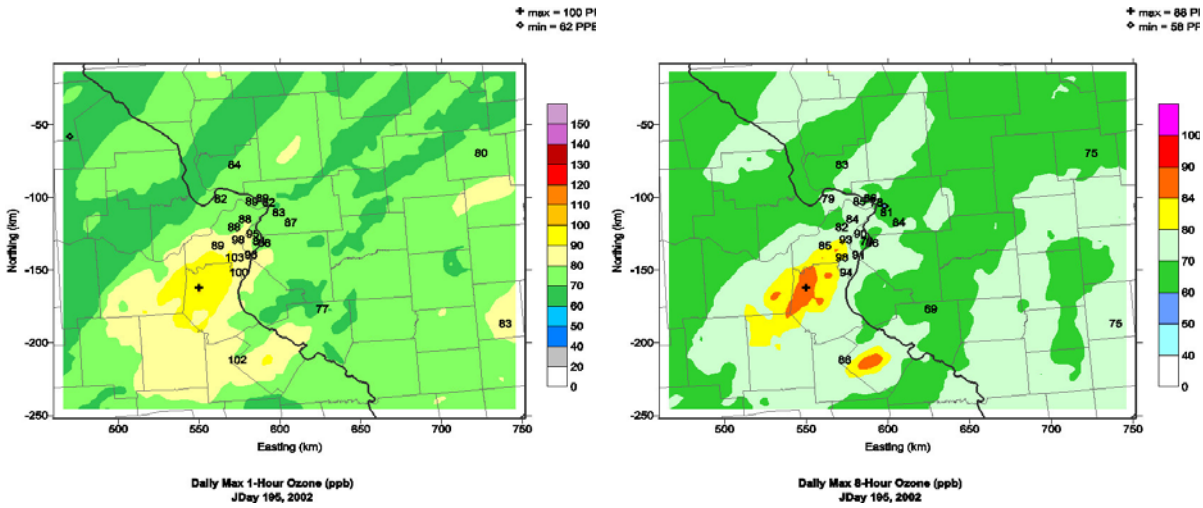


Figure D-28. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 14, 2002.

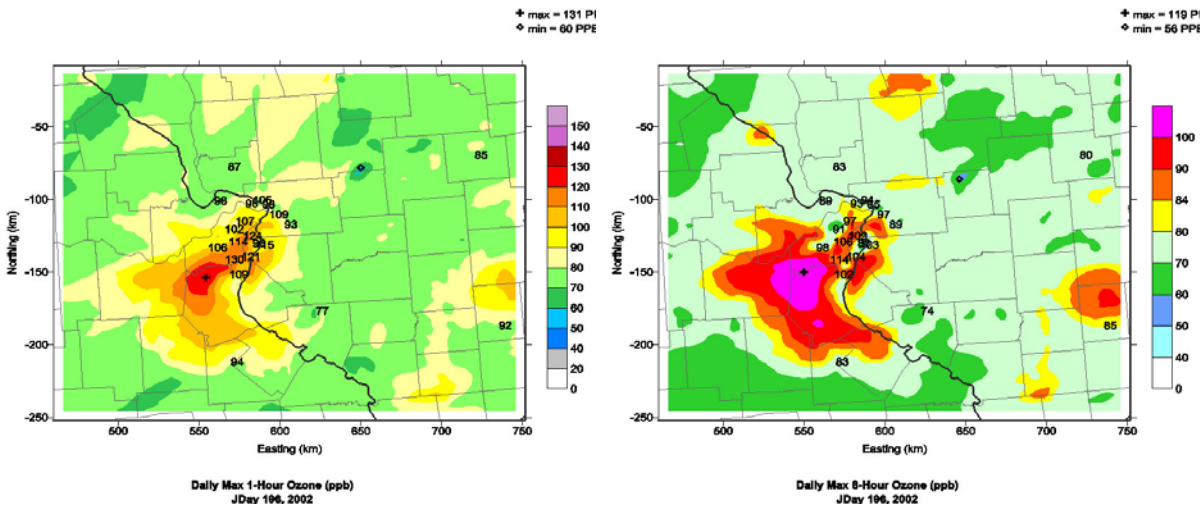


Figure D-29. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 15, 2002.

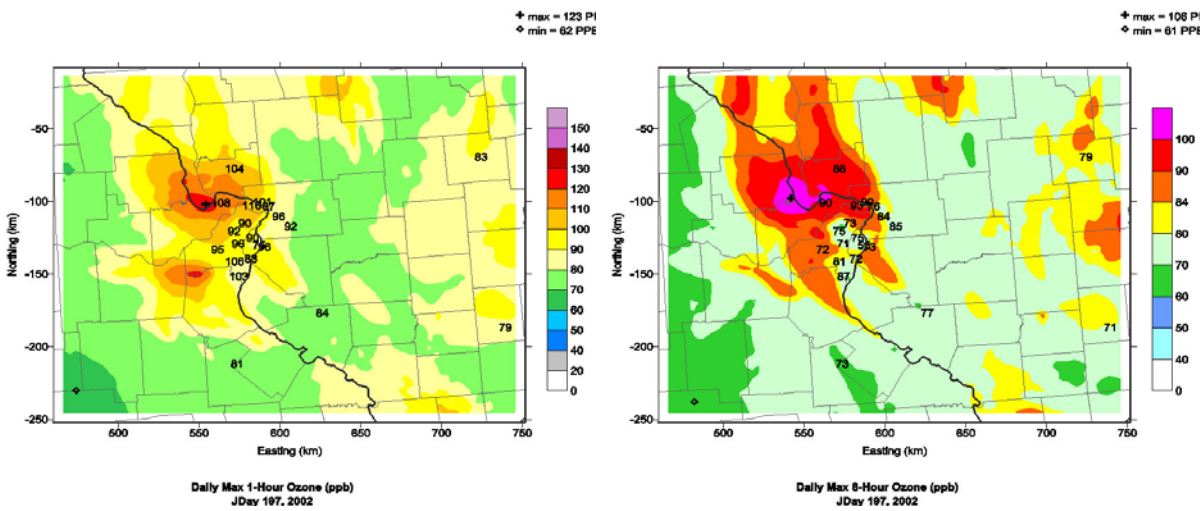


Figure D-30. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 16, 2002.

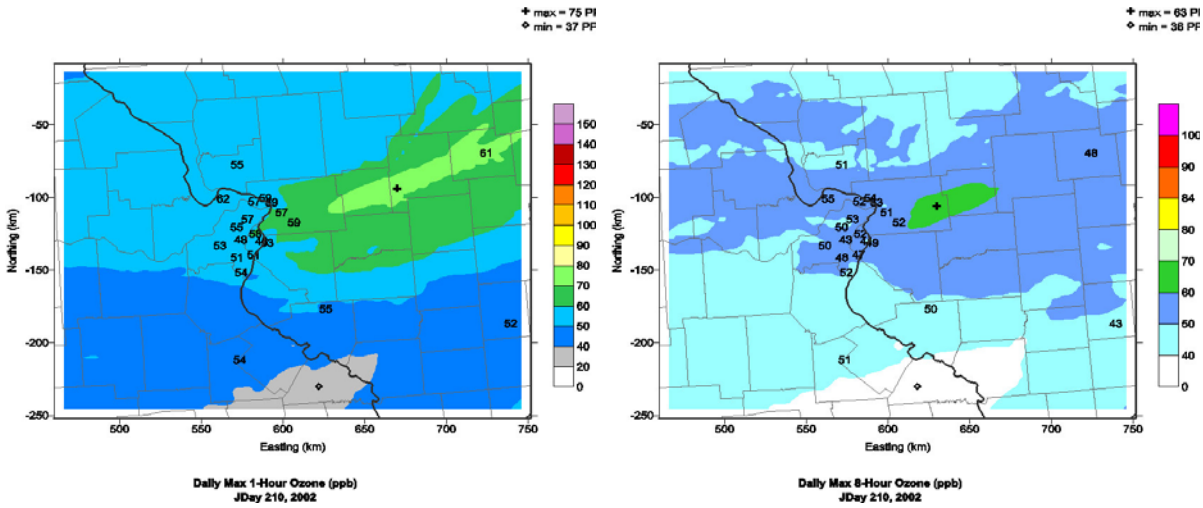


Figure D-31. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 29, 2002.

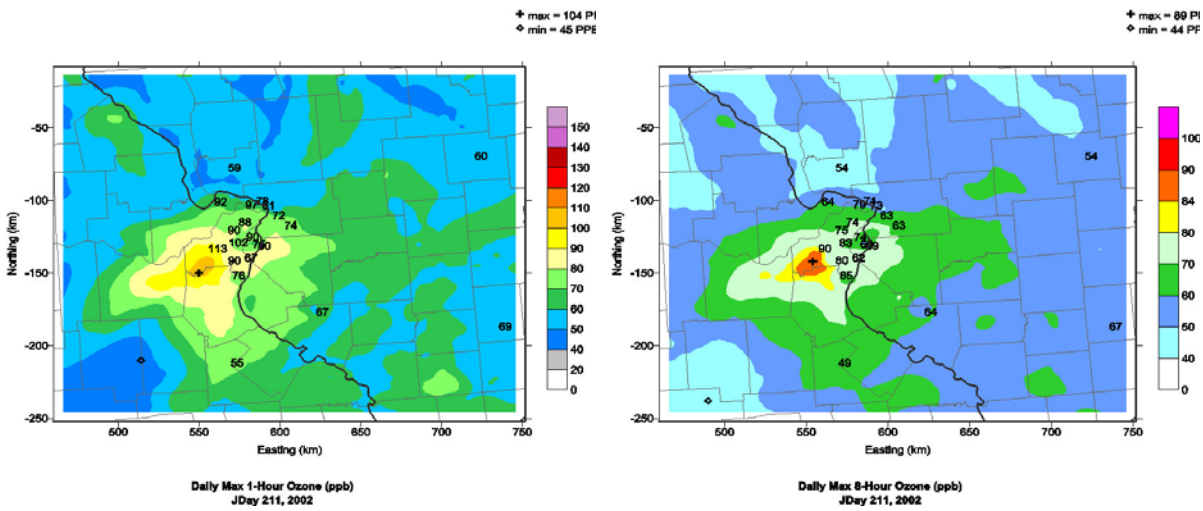


Figure D-32. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 30, 2002.

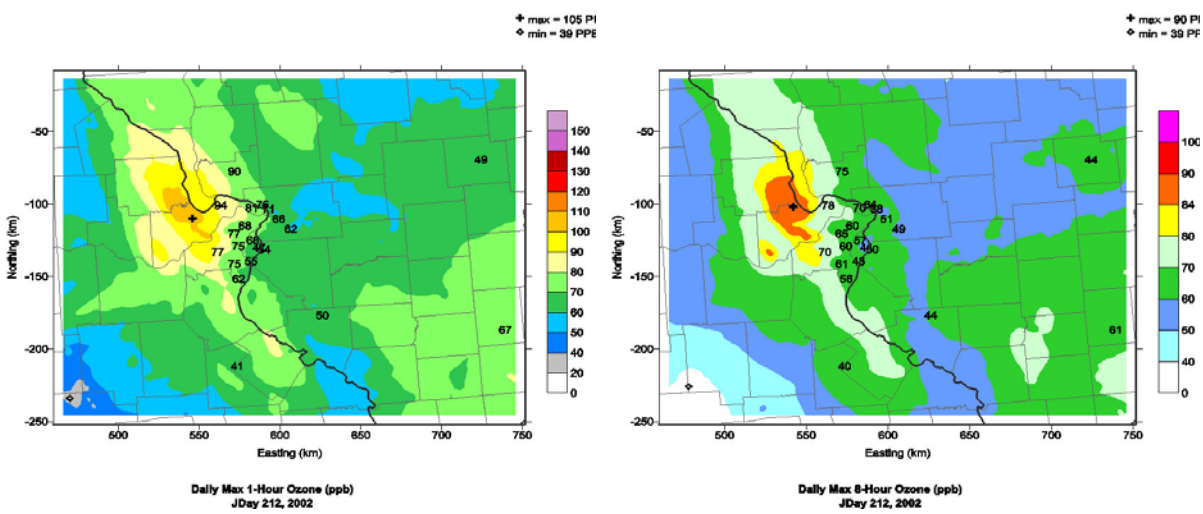


Figure D-33. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for July 31, 2002.

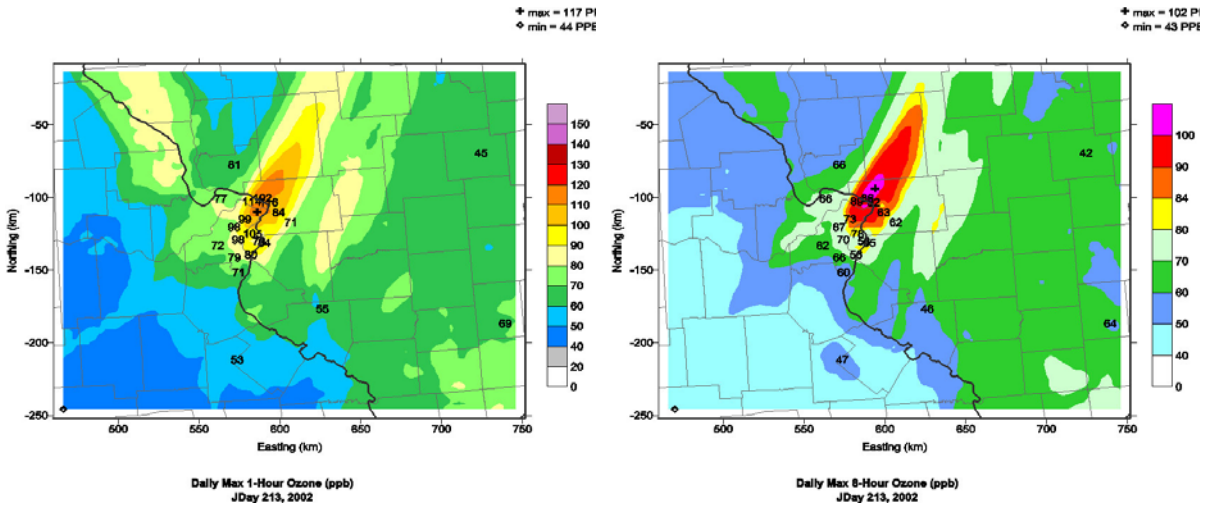


Figure D-34. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for August 1, 2002.

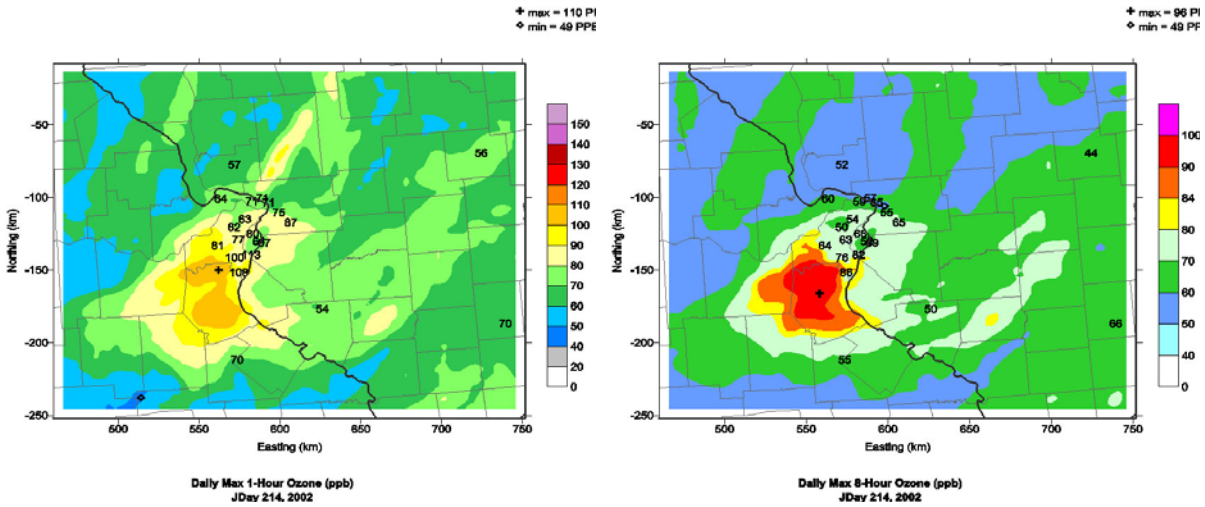


Figure D-35. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for August 2, 2002.

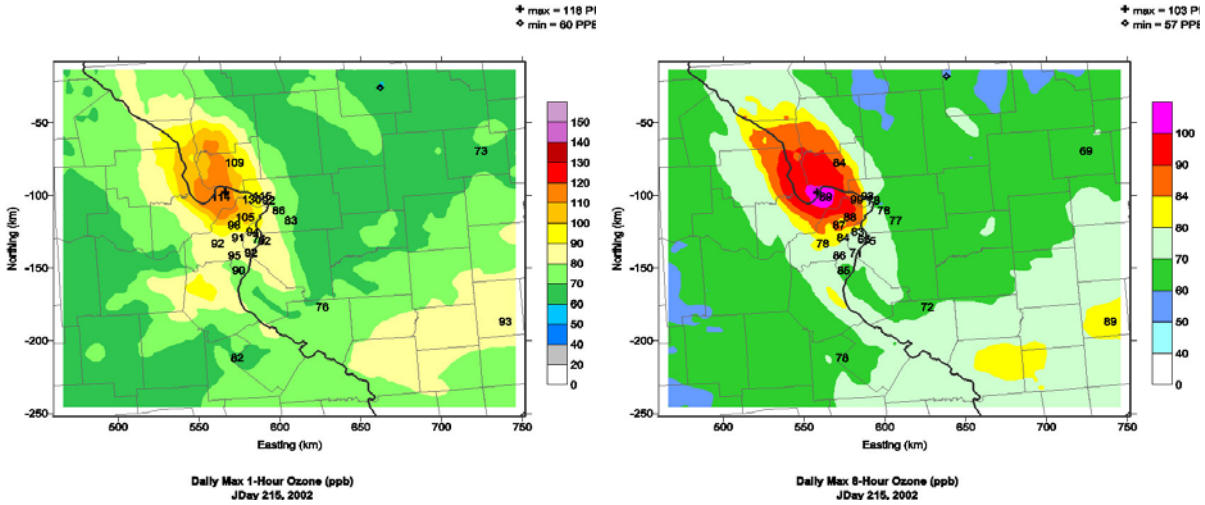


Figure D-36. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for August 3, 2002.

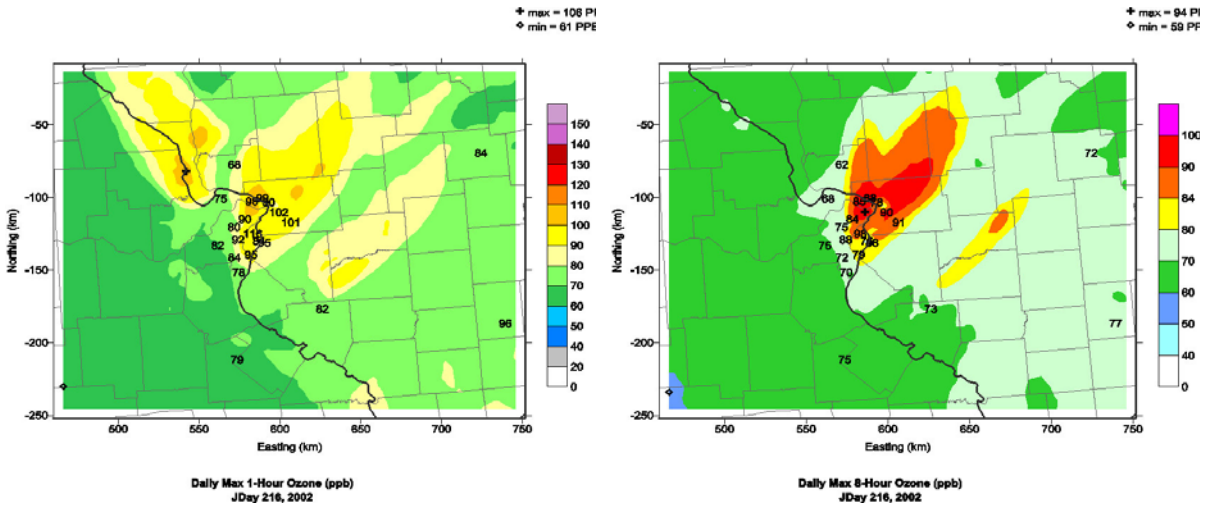


Figure D-37. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for August 4, 2002.

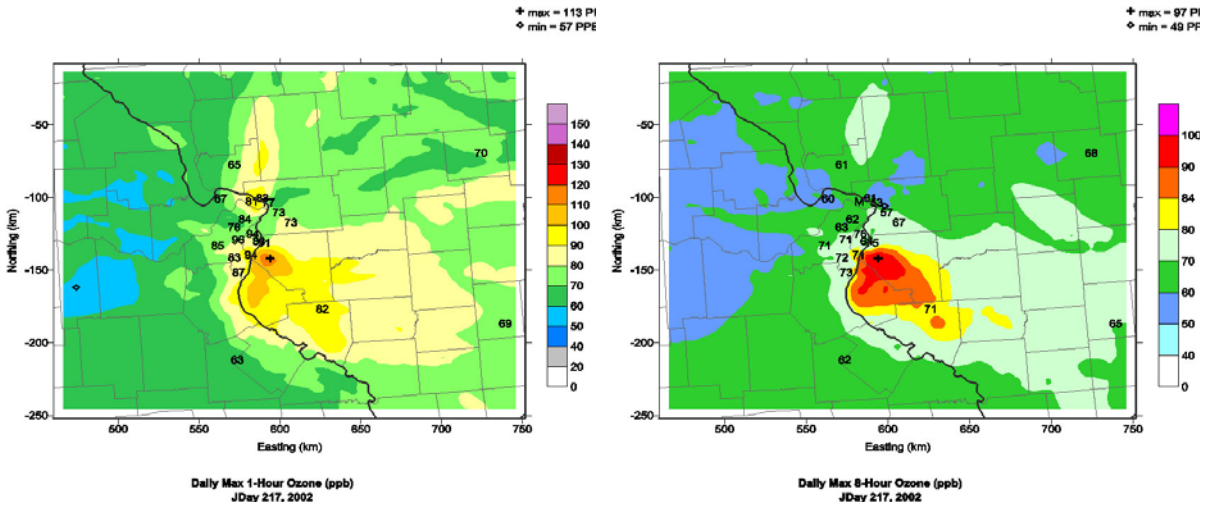
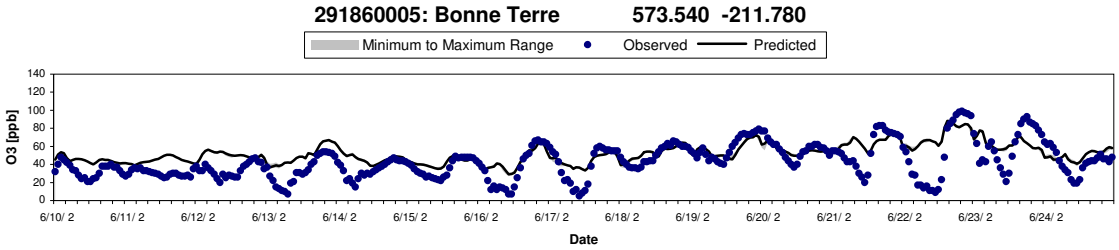
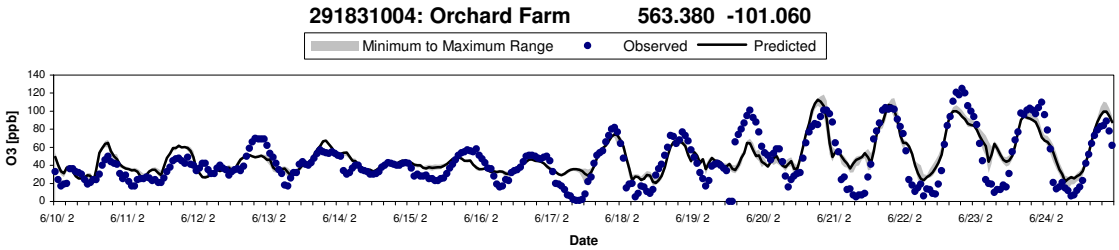
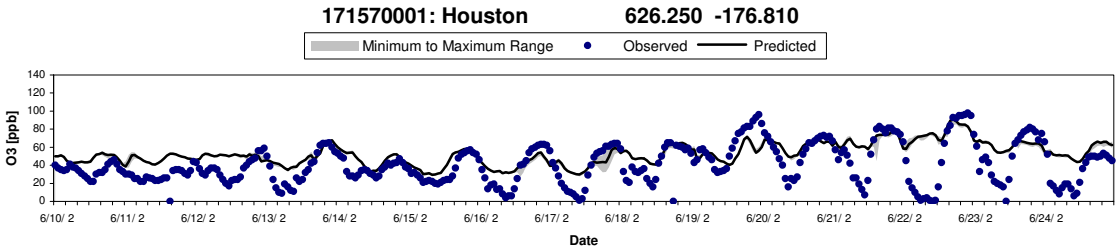


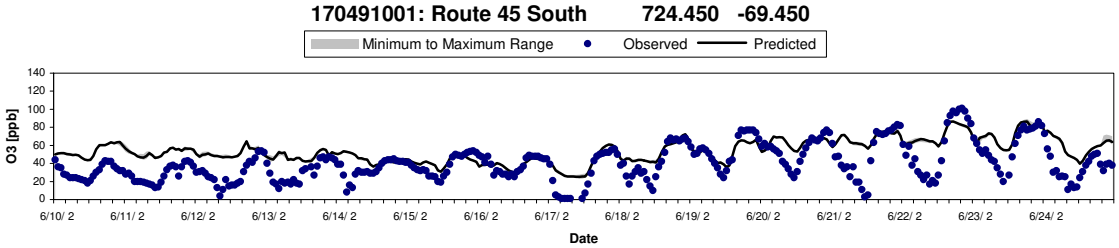
Figure D-38. Observed and modeled daily max. 1-hour and 8-hour ozone concentrations for August 5, 2002.

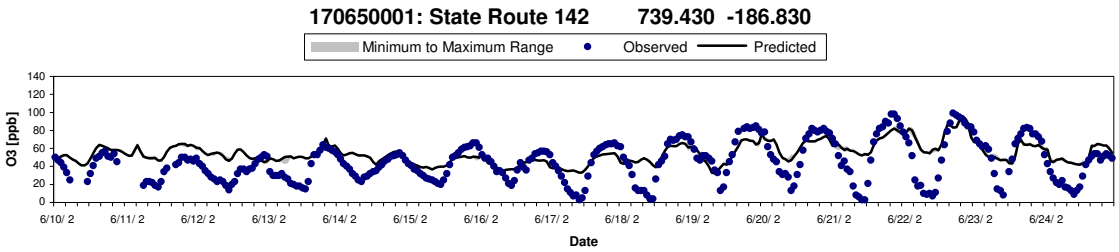
Time Series of Predicted and Observed Hourly Ozone


291860005: Bonne Terre 573.540 -211.780
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

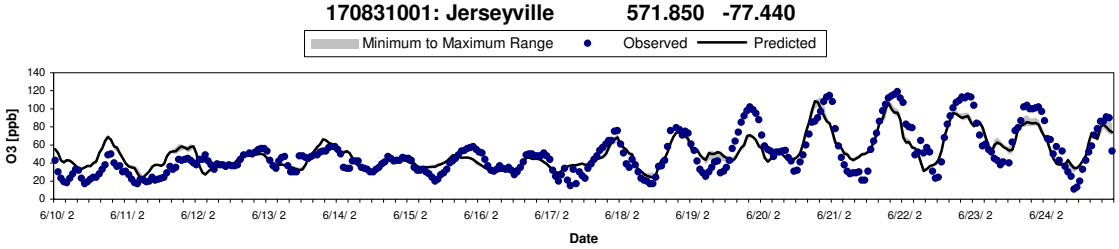

291831004: Orchard Farm 563.380 -101.060
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date


171570001: Houston 626.250 -176.810
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

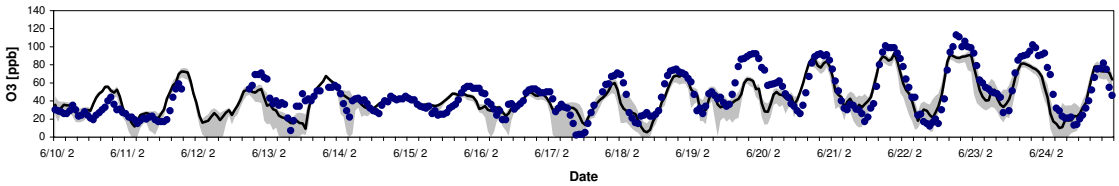

170491001: Route 45 South 724.450 -69.450
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date


170650001: State Route 142 739.430 -186.830
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

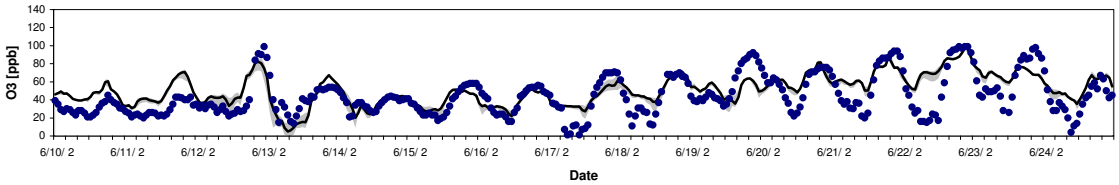
170831001: Jerseyville 571.850 -77.440



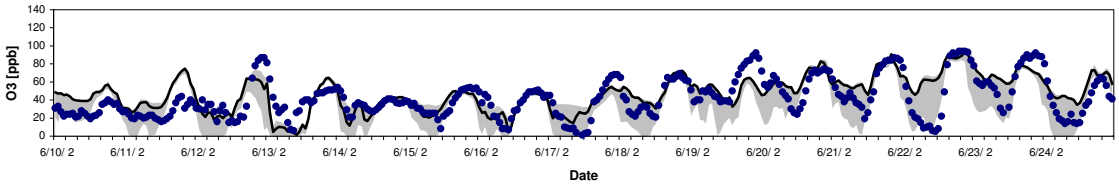
171190008: Alton 589.130 -100.480



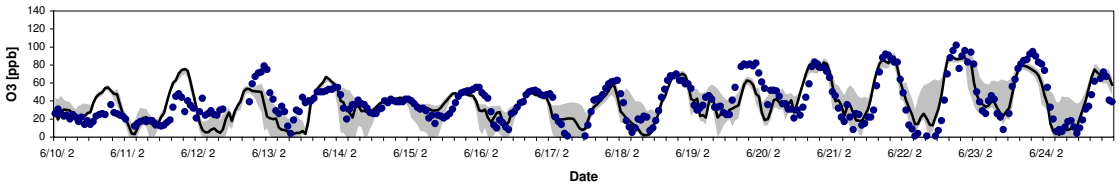
171191009: Maryville 606.740 -117.280



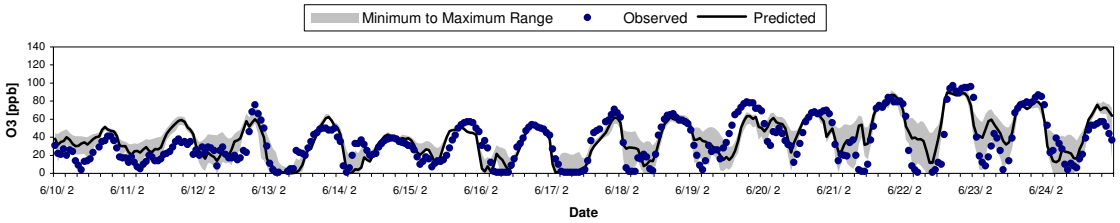
171192007: Edwardsville 599.240 -110.460



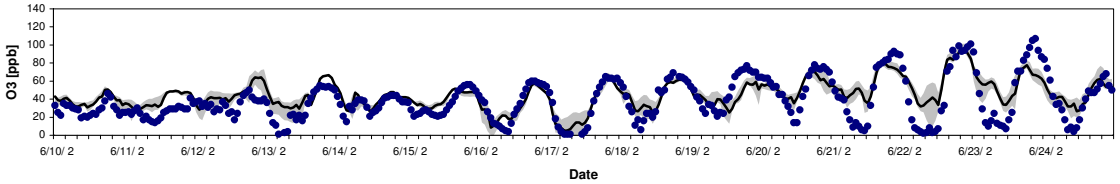
171193007: Wood River 593.000 -103.490



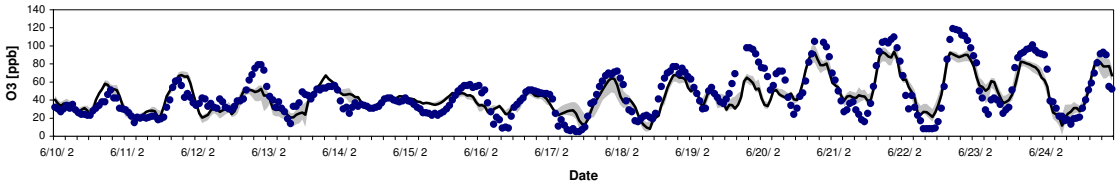
171630010: E. St. Louis 590.390 -131.220



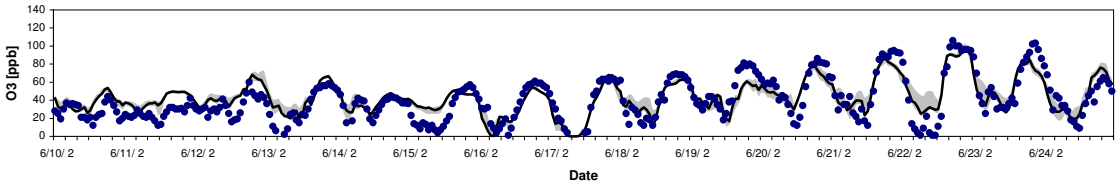
290990012: Arnold 574.470 -151.750



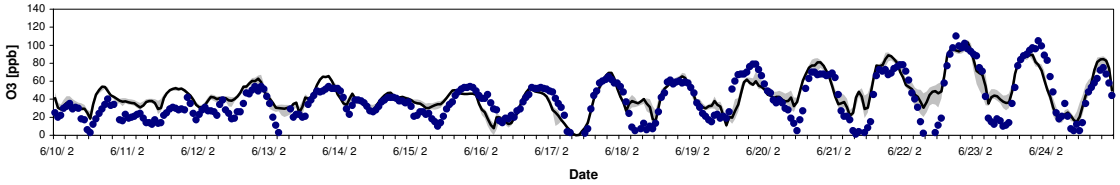
291831002: W. Alton 582.550 -102.950

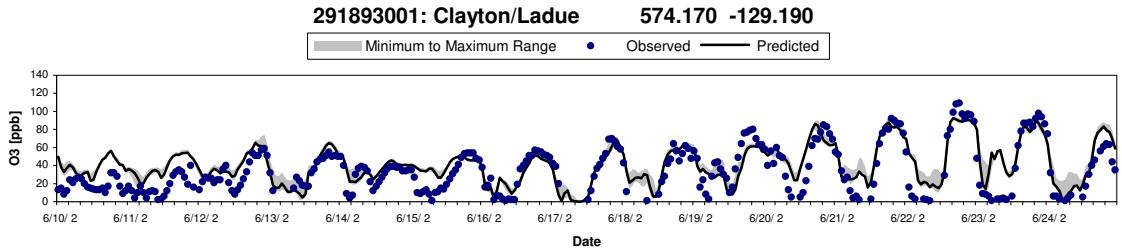


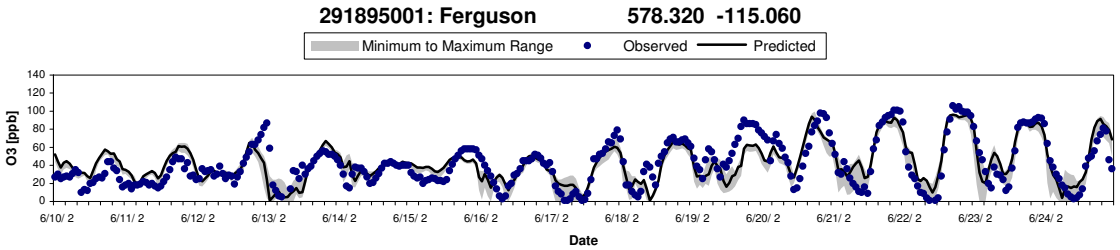
291890004: Sunset Hills 571.860 -141.430

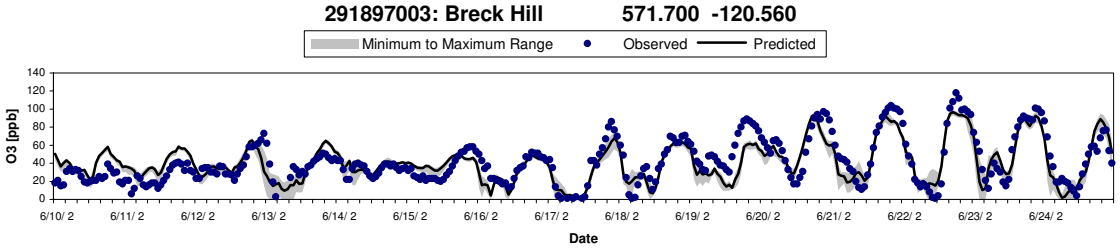


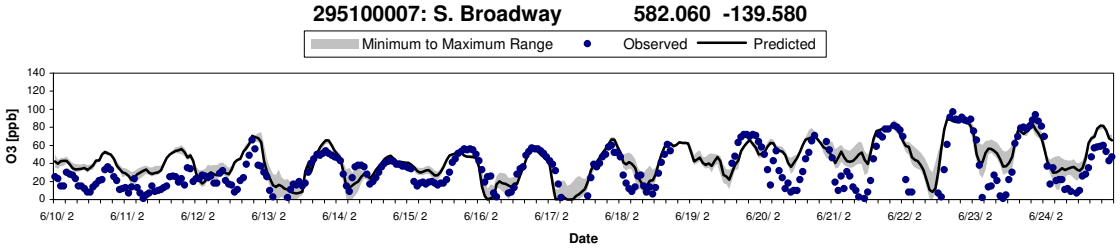
291890006: Queeny Park 561.470 -133.190

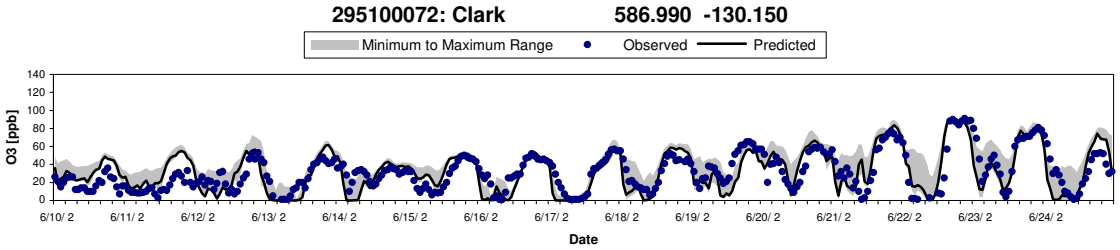



291893001: Clayton/Ladue 574.170 -129.190
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date


291895001: Ferguson 578.320 -115.060
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date


291897003: Breck Hill 571.700 -120.560
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date


295100007: S. Broadway 582.060 -139.580
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date


295100072: Clark 586.990 -130.150
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

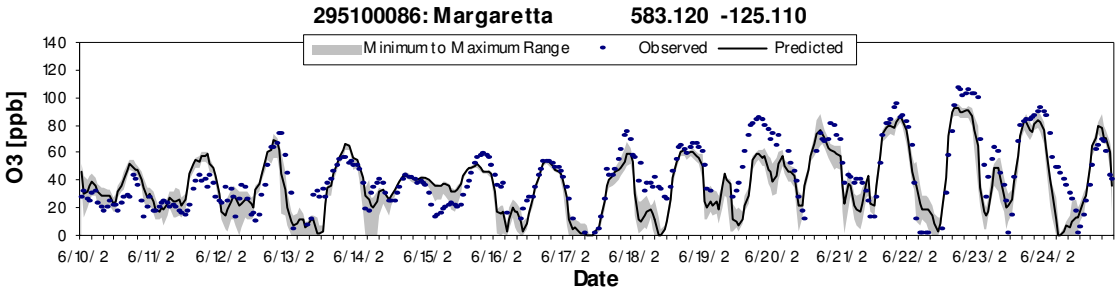
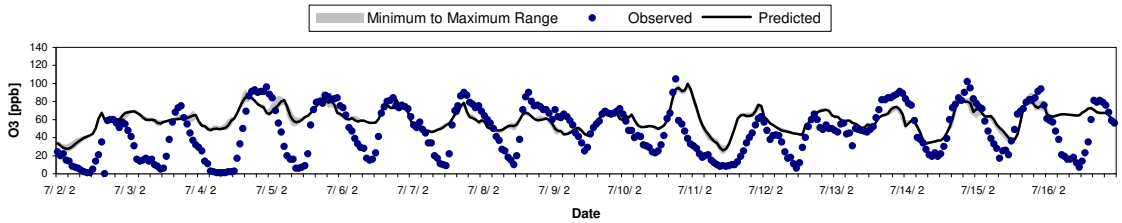
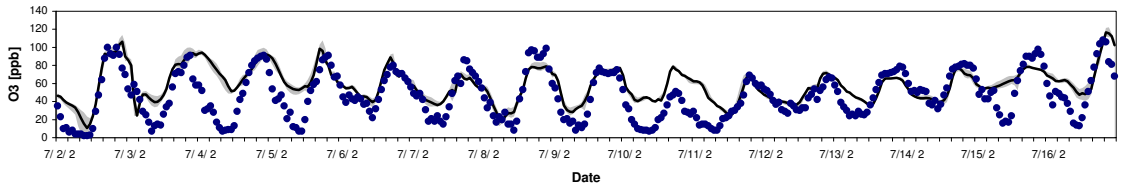


Figure D-39. Observed (blue dots) and modeled (solid black line) 1-hour average ozone time series for St. Louis nonattainment area monitors for 4 km grid. Summer 2002, Episode 1.

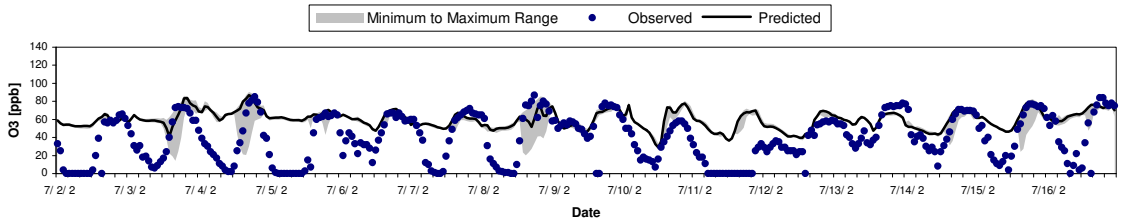
291860005: Bonne Terre 573.540 -211.780



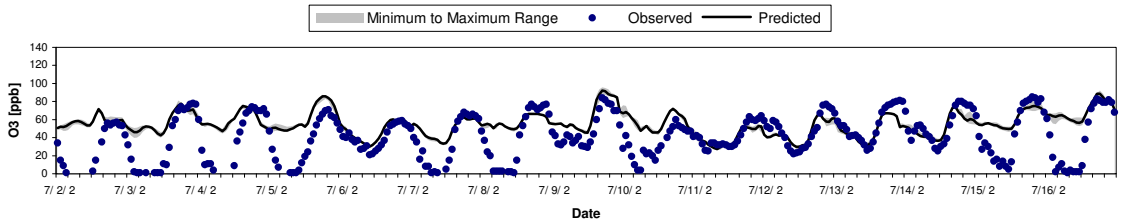
291831004: Orchard Farm 563.380 -101.060



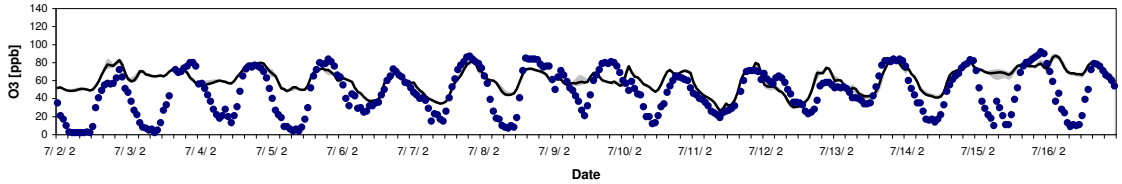
171570001: Houston 626.250 -176.810

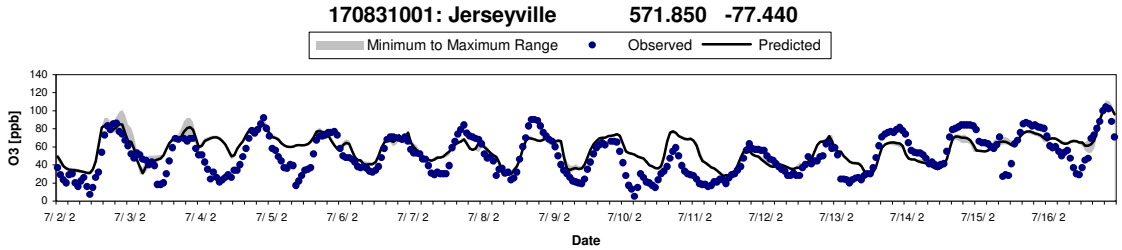


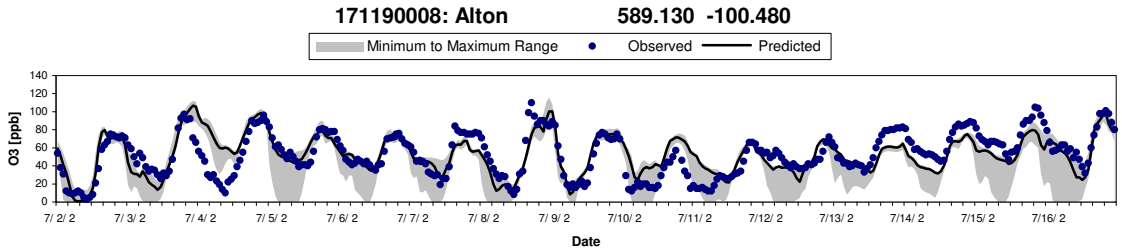
170491001: Route 45 South 724.450 -69.450

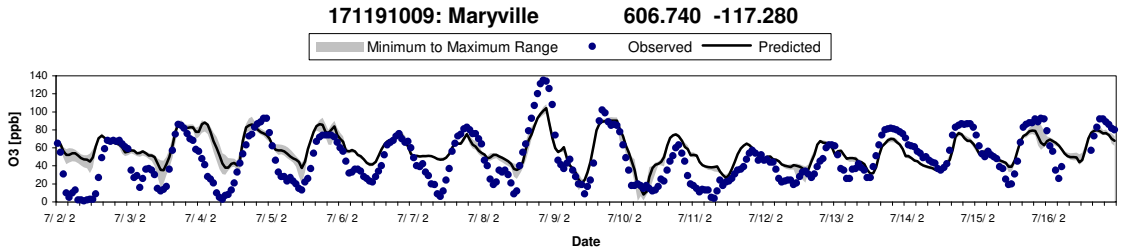


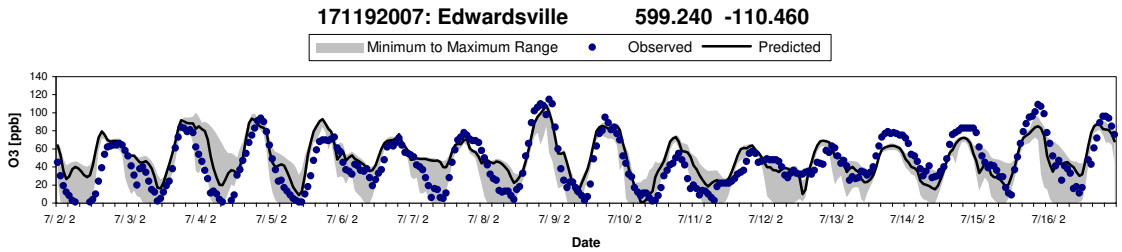
170650001: State Route 142 739.430 -186.830

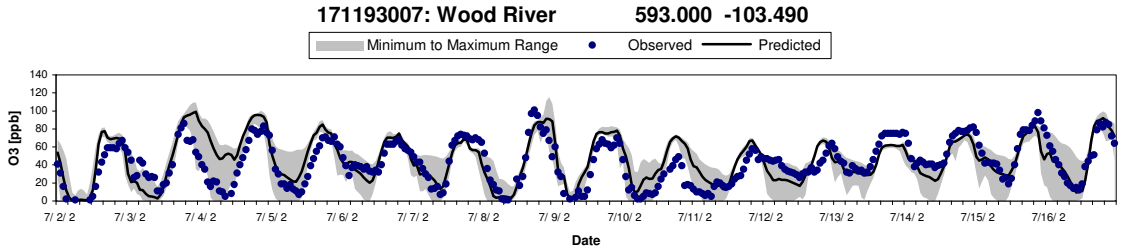


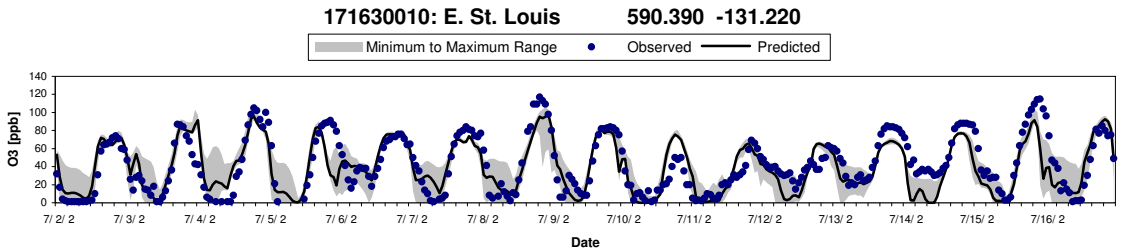

170831001: Jerseyville 571.850 -77.440
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

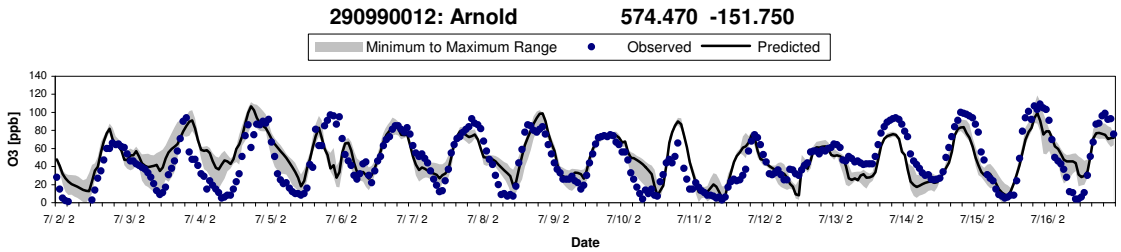

171190008: Alton 589.130 -100.480
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

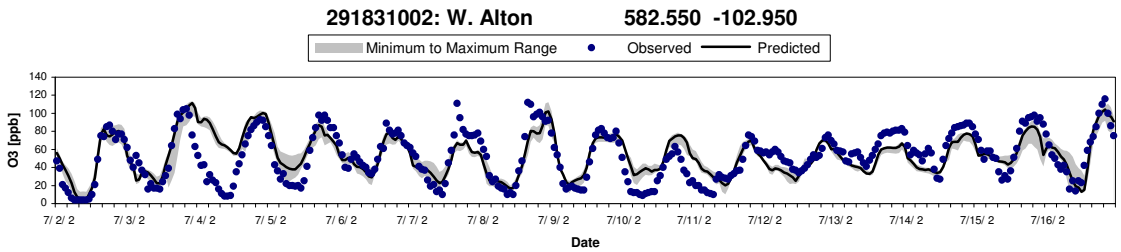

171191009: Maryville 606.740 -117.280
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

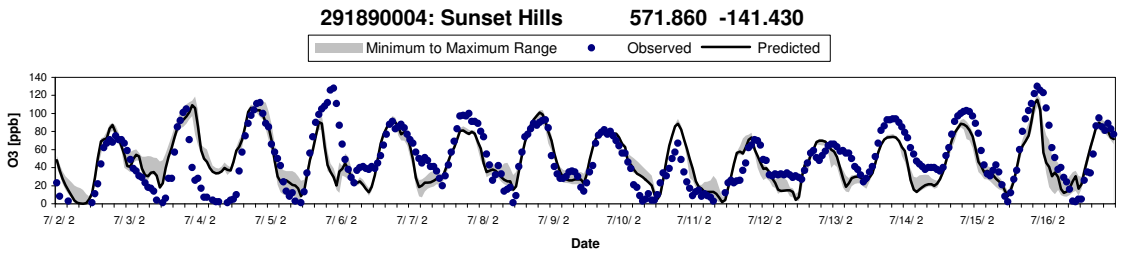

171192007: Edwardsville 599.240 -110.460
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

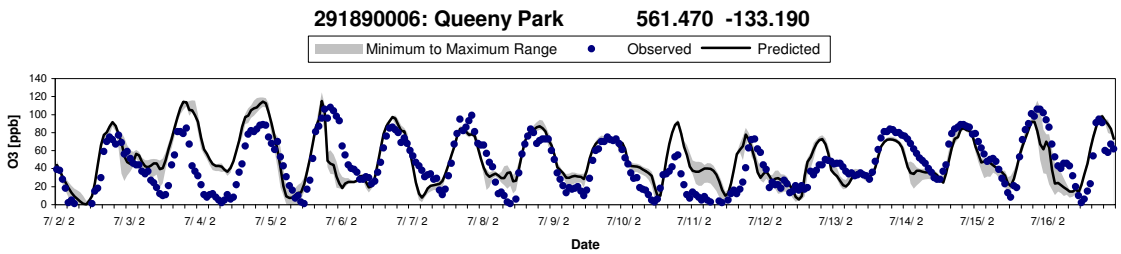

171193007: Wood River 593.000 -103.490
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date


171630010: E. St. Louis 590.390 -131.220
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

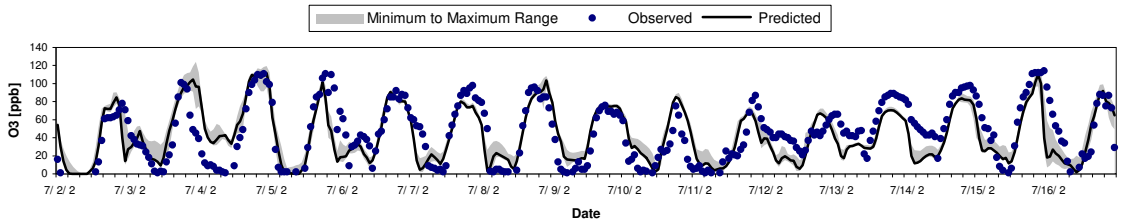

290990012: Arnold 574.470 -151.750
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date


291831002: W. Alton 582.550 -102.950
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

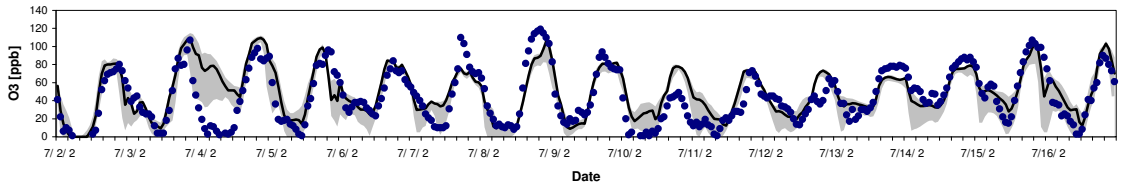

291890004: Sunset Hills 571.860 -141.430
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date


291890006: Queeny Park 561.470 -133.190
Minimum to Maximum Range
Observed
Predicted
O3 [ppb]
Date

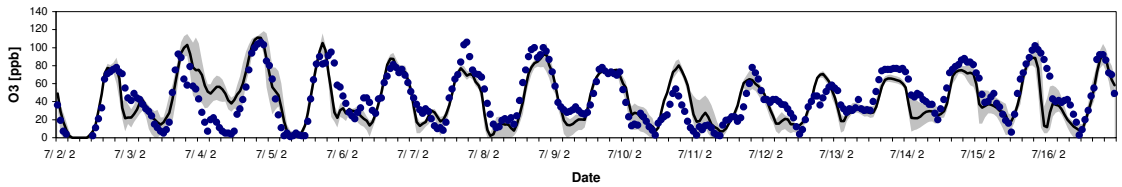
291893001: Clayton/Ladue 574.170 -129.190



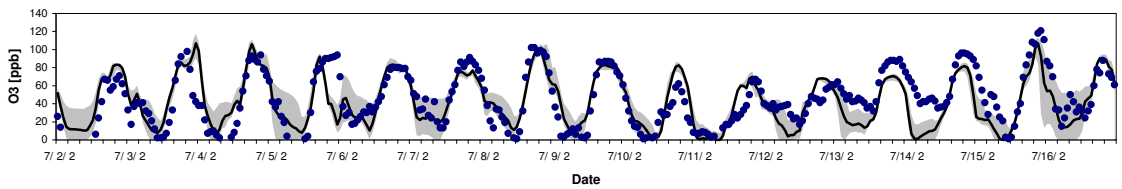
291895001: Ferguson 578.320 -115.060



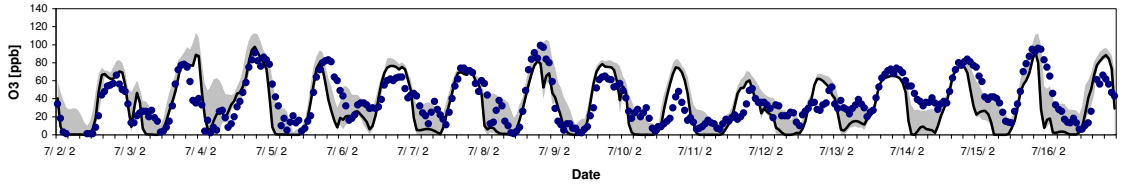
291897003: Breck Hill 571.700 -120.560



295100007: S. Broadway 582.060 -139.580



295100072: Clark 586.990 -130.150



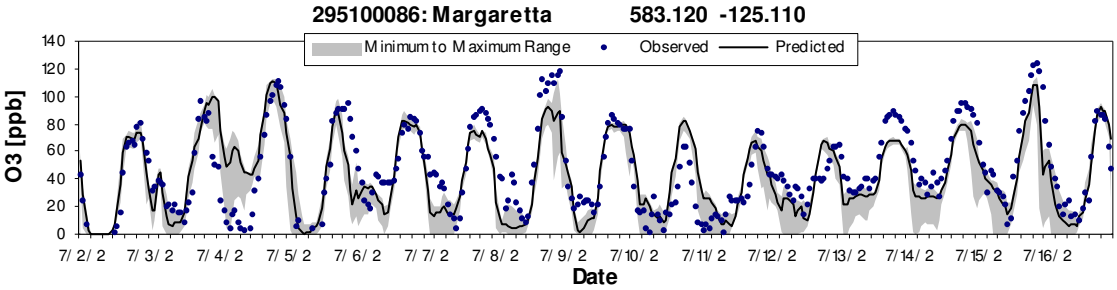
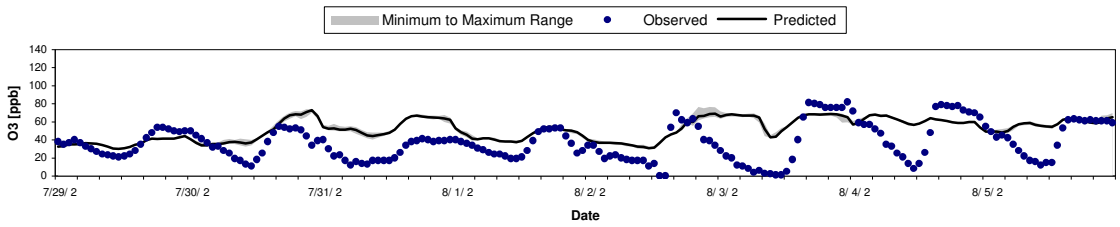
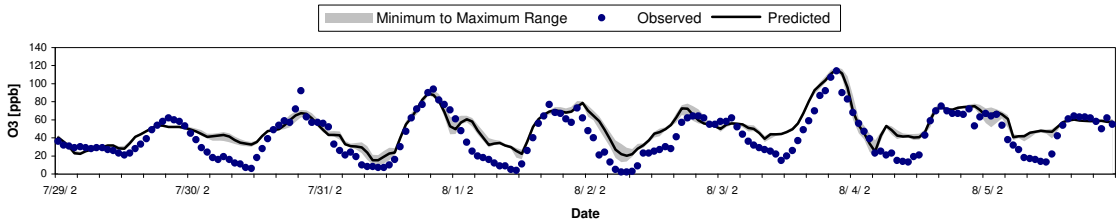


Figure D-40. Observed (blue dots) and modeled (solid black line) 1-hour average ozone time series for St. Louis nonattainment area monitors for 4 km grid. Summer 2002, Episode 2.

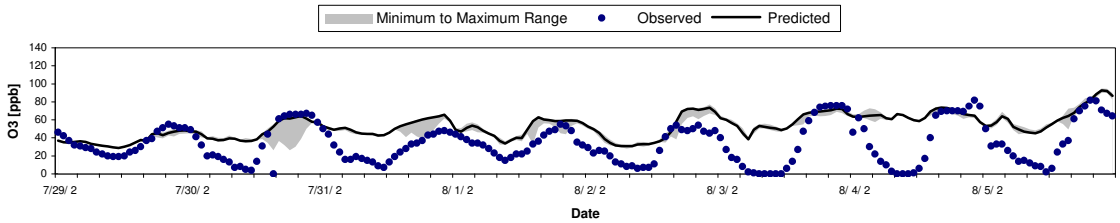
291860005: Bonne Terre 573.540 -211.780



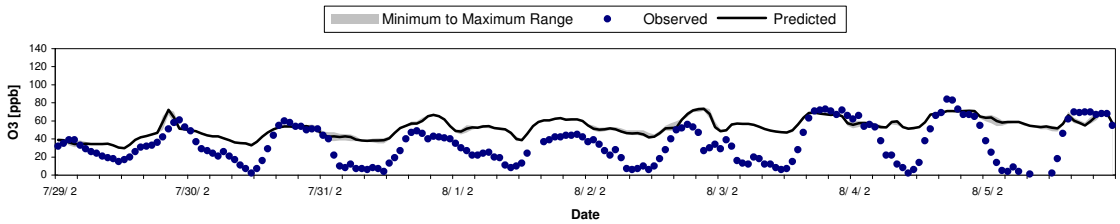
291831004: Orchard Farm 563.380 -101.060



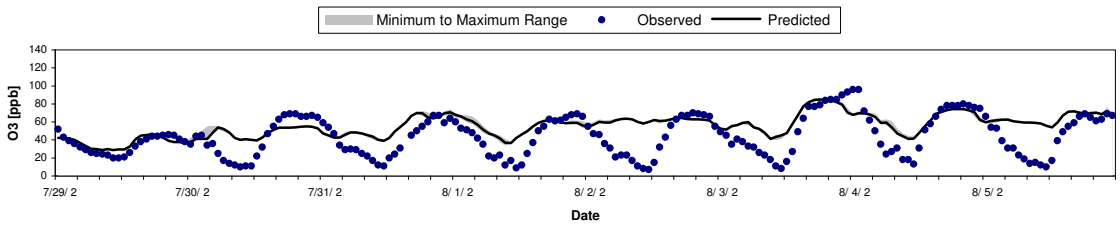
171570001: Houston 626.250 -176.810



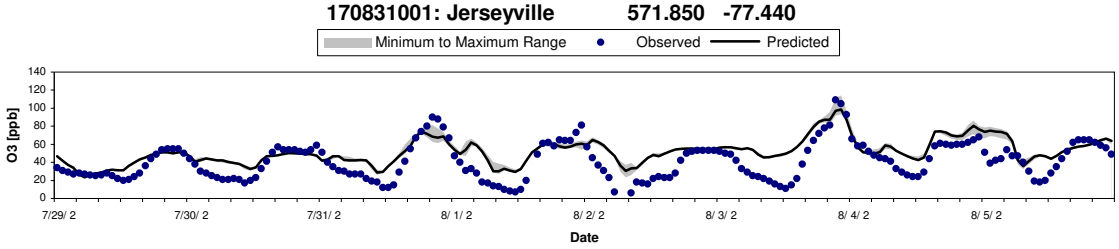
170491001: Route 45 South 724.450 -69.450



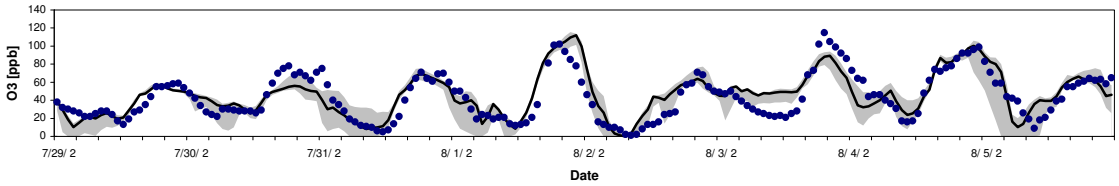
170650001: State Route 142 739.430 -186.830



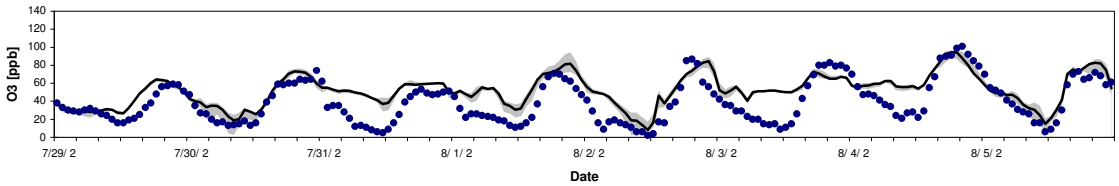
170831001: Jerseyville 571.850 -77.440



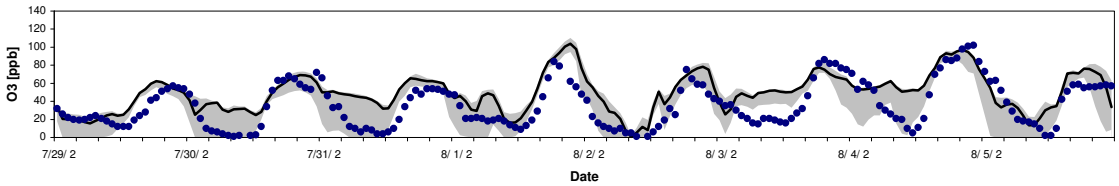
171190008: Alton 589.130 -100.480



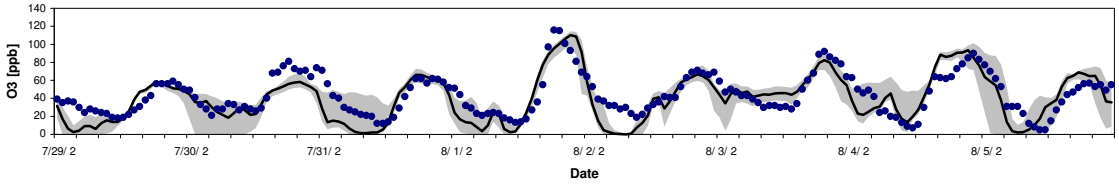
171191009: Maryville 606.740 -117.280



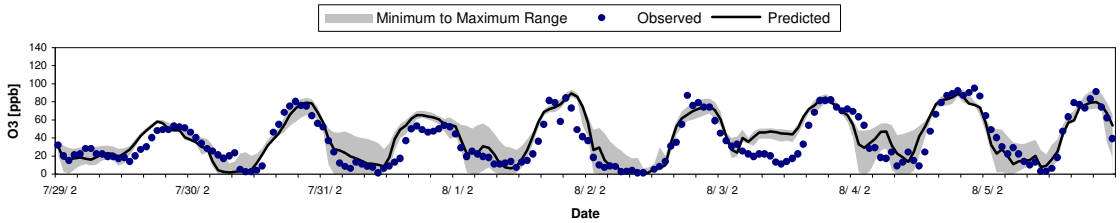
171192007: Edwardsville 599.240 -110.460



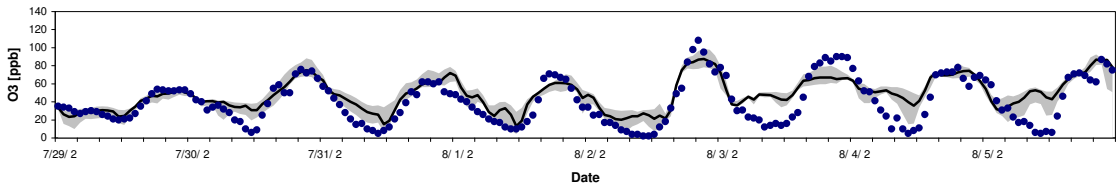
171193007: Wood River 593.000 -103.490



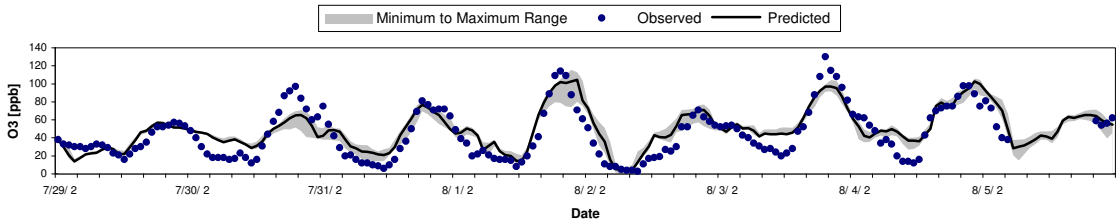
171630010: E. St. Louis 590.390 -131.220



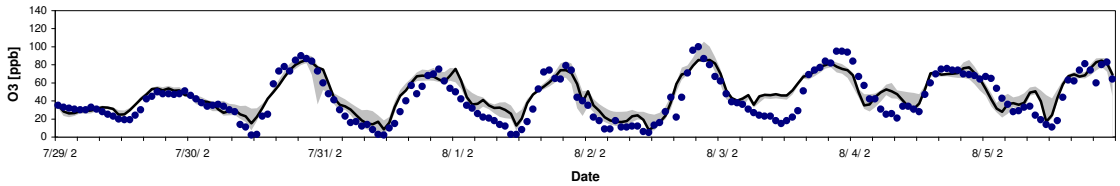
290990012: Arnold 574.470 -151.750



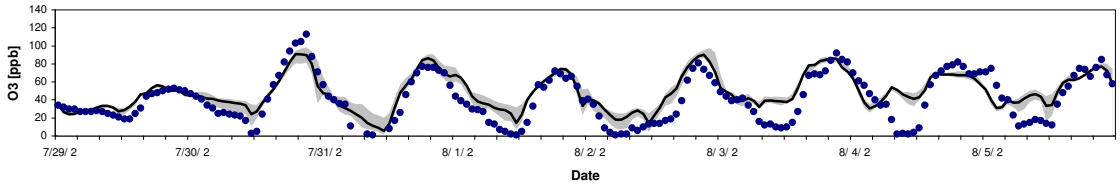
291831002: W. Alton 582.550 -102.950



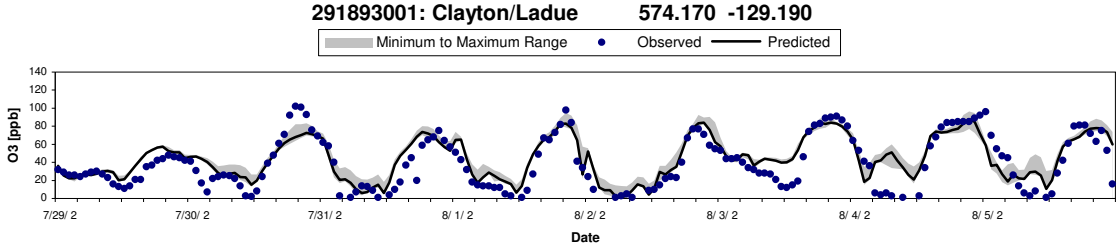
291890004: Sunset Hills 571.860 -141.430



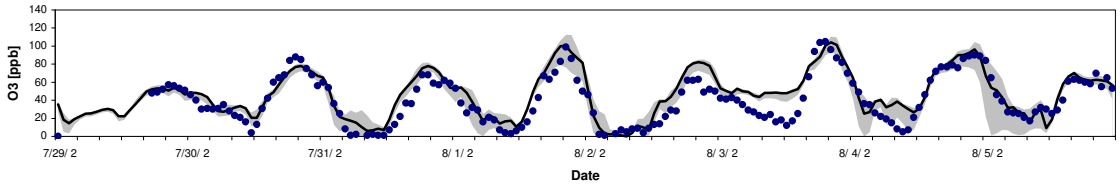
291890006: Queeny Park 561.470 -133.190



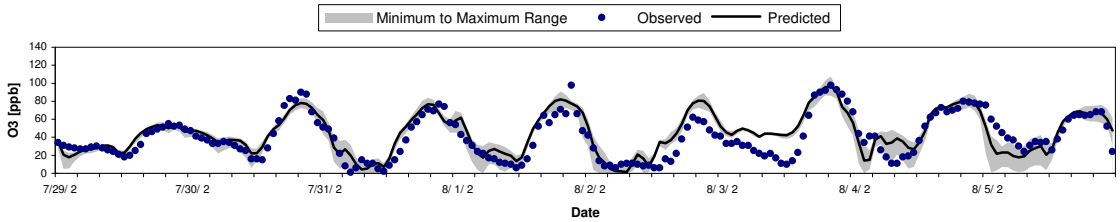
291893001: Clayton/Ladue 574.170 -129.190



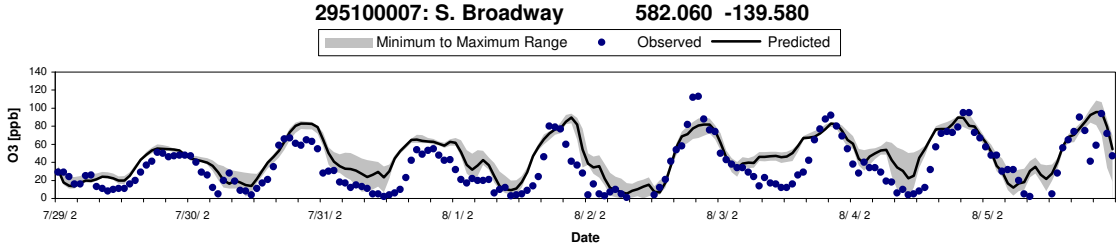
291895001: Ferguson 578.320 -115.060



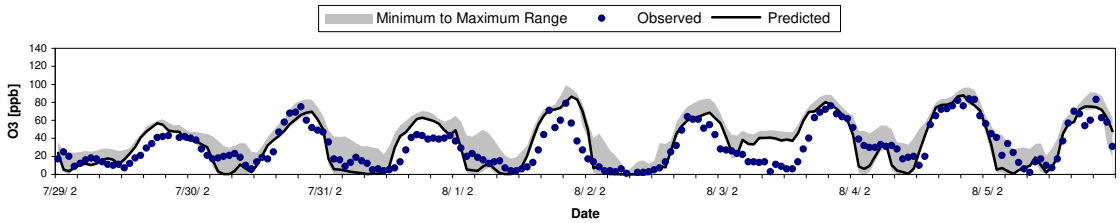
291897003: Breck Hill 571.700 -120.560



295100007: S. Broadway 582.060 -139.580



295100072: Clark 586.990 -130.150



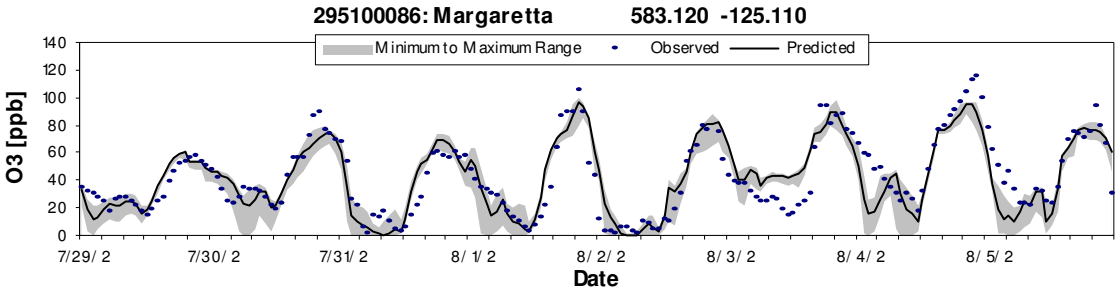


Figure D-41. Observed (blue dots) and modeled (solid black line) 1-hour average ozone time series for St. Louis nonattainment area monitors for 4 km grid. Summer 2002, Episode 3.

Scatter Plots of Predicted and Observed Hourly Ozone

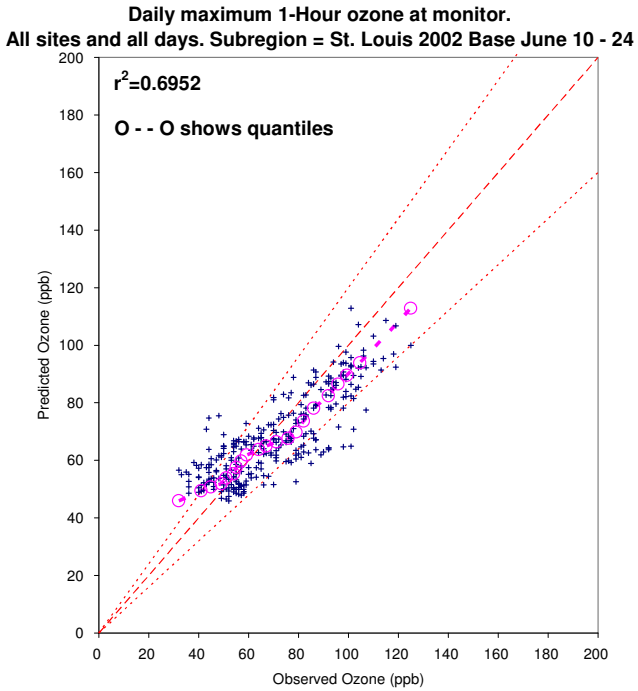


Figure D-42: Episode 1 1-hour ozone performance. Pairs matched by day and at monitor location.

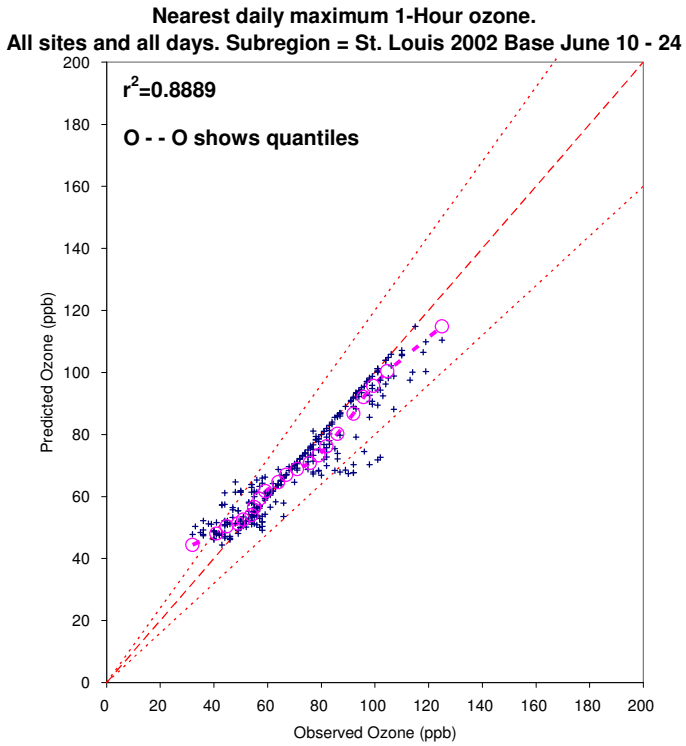


Figure D-43: Episode 1 1-hour ozone performance. Pairs matched by day and maximum predicted value near monitor location.

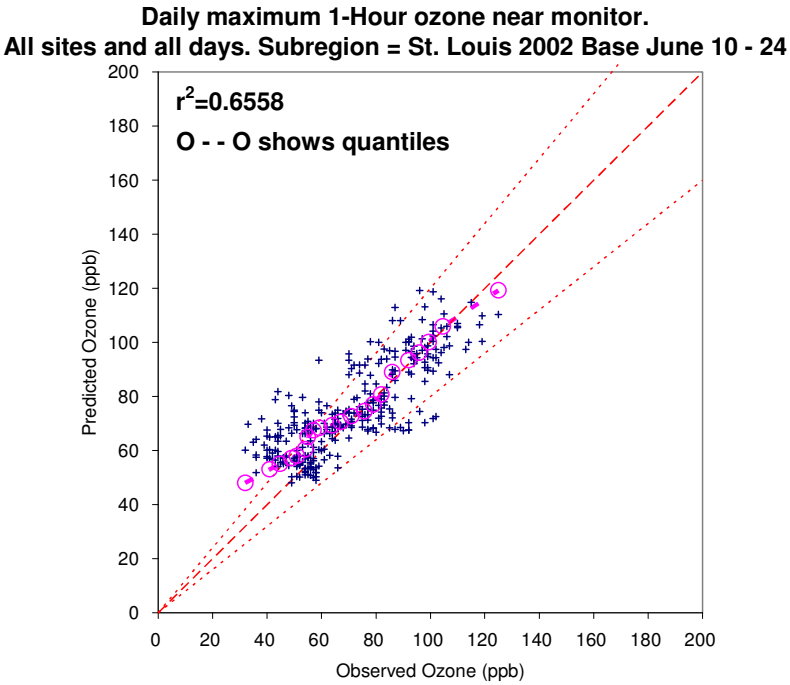


Figure D-44. Episode 1 1-hour ozone performance. Pairs matched by day and closest predicted value near monitor location.