

Appendix K - Base Case Model Performance Evaluation

This appendix contains the complete detailed graphical and statistical analyses documenting the base case performance evaluation for the August 10-13, 2000 and August 28 - September 6, 2000 episodes.

The information presented in this appendix may be broken down into 4 components:

- I. Performance evaluation statistical tables for 1-hour and 8-hour for the August 10-13, 2000 and August 28- September 6, 2000 episodes. This includes values for unpaired peak accuracy, bias, and gross error.
- II. Time series for all stations and episodes, both 1-hour and 8-hour.
- III. Scatter plots for all stations and episode days, both 1-hour and 8-hour
- IV. Isopleth plots for each day within the August 10-13, 2000 and August 28 - September 6, 2000 episodes for both 1-hour and 8-hour.

I. Performance Evaluation Statistical Evaluation Tables

Table K-1 1-hour Performance Statistics for August 10 - 13, 2000 Episode

Date	Unpaired peak accuracy (± 15-20%)	Bias (± 5-15%)	Gross error (30-35%)	Max observed ozone (ppb)	Max predicted ozone (ppb)
8/10/2000	-30.1	-13.4	14.8	120.0	83.9
8/11/2000	5.2	-3.6	18.2	107.0	112.5
8/12/2000	-4.3	-6.0	16.3	126.0 (CAMS28)	120.6
8/13/2000	-7.9	-8.3	14.6	102.0	93.9

Table K-2 8-hour Performance Statistics for August 10 - 13, 2000 Episode

Date	Unpaired peak accuracy (± 15-20%)	Bias (± 5-15%)	Gross error (30-35%)	Max observed ozone (ppb)	Max predicted ozone (ppb)
8/10/2000	-3.7	2.1	11.1	74.6	71.9
8/11/2000	39.5	21.1	23.6	72.2	100.8
8/12/2000	5.6	4.5	15.0	99.8 (CAMS28)	105.3
8/13/2000	-5.6	0.1	11.5	89.0 (CAMS64)	84.0

Table K-3 1-hour Performance Statistics for August 28 - September 6, 2000 Episode

Date	Unpaired peak accuracy ($\pm 15-20\%$)	Bias ($\pm 5-15\%$)	Gross error (30-35%)	Max observed ozone (ppb)	Max predicted ozone (ppb)
8/28/2000	28.0	-15.5	15.5	69 (CAMS9)	88.3
8/29/2000	-7.6	-2.1	14.7	114 (CAMS9)	105.3
8/30/2000	-25.1	-5.0	19.2	165 (CAMS28)	123.6
8/31/2000	-1.4	7.0	15.6	152 (S640)	149.9
9/1/2000	-19.1	16.9	31.2	160 (CAMS28)	129.5
9/2/2000	36.0	0.4	20.9	100 (S640)	137.0
9/3/2000	15.8	10.3	16.4	107 (CAMS9)	123.9
9/4/2000	11.9	-2.7	13.7	115 (CAMS28)	128.7
9/5/2000	85.5	55.4	57.4	94 (CAMS64)	174.3
9/6/2000	-4.1	7.1	14.9	113 (CAMS28)	108.4

Table K-4 8-hour Performance Statistics for August 10 - 13, 2000 Episode

Date	Unpaired peak accuracy ($\pm 15-20\%$)	Bias ($\pm 5-15\%$)	Gross error (30-35%)	Max observed ozone (ppb)	Max predicted ozone (ppb)
8/28/2000	41.9	13.9	13.9	52 (CAMS9)	74.5
8/29/2000	5.9	7.6	11.8	83 (CAMS2)	88.3
8/30/2000	-7.7	6.6	16.4	116 (S640)	107.4
8/31/2000	28.5	15.1	16.6	105 (CAMS28)	135.3
9/1/2000	18.6	23.8	28.9	96 (CAMS28)	113.9
9/2/2000	14.2	6.1	15.1	86 (CAMS28)	99.1
9/3/2000	24.2	23.2	25.1	75 (CAMS9)	93.4
9/4/2000	7.0	6.8	12.8	98 (S640)	105.1
9/5/2000	78.1	57.1	57.3	80 (CAMS28)	142.5
9/6/2000	17.6	21.9	23.0	85 (CAMS28)	100.9

II. Time series graphics for all stations and episodes, both 1-hour and 8-hour.

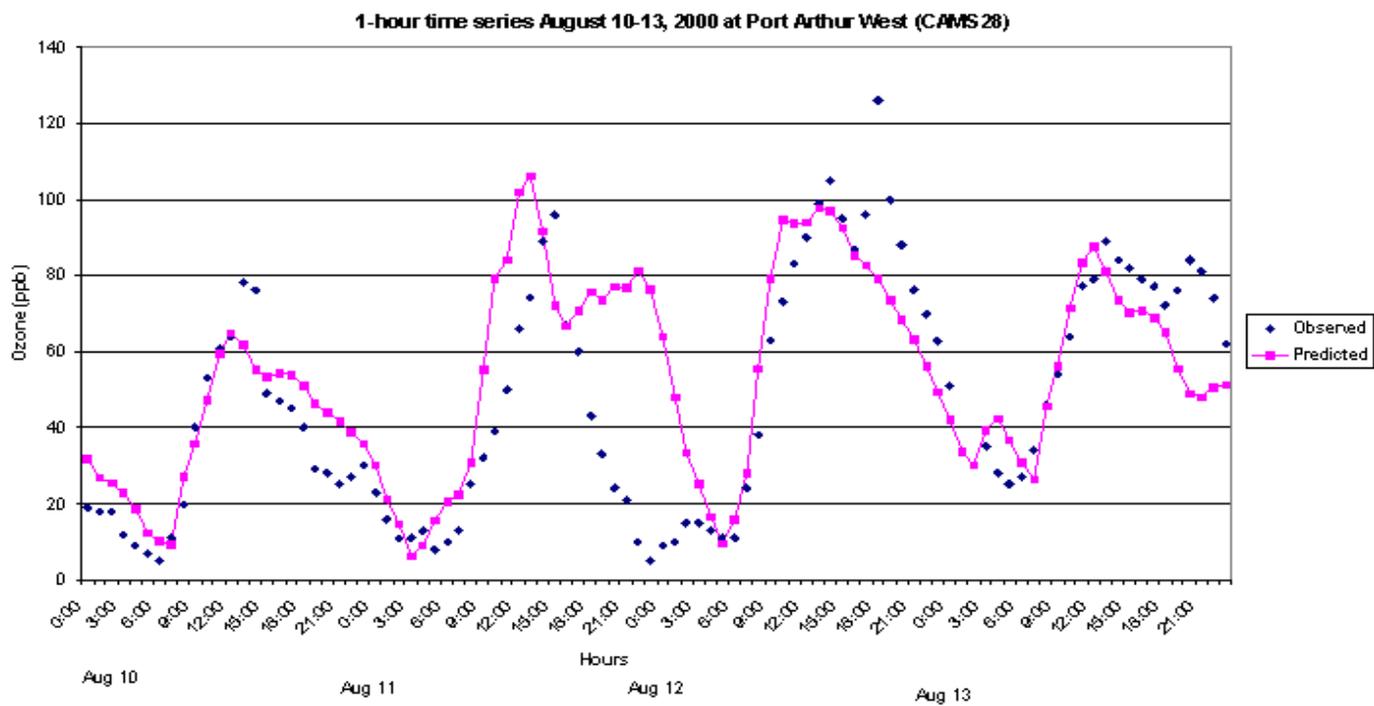


Figure K-1 1-hour Ozone Time Series August 10, 13, 2000 at CAMS28

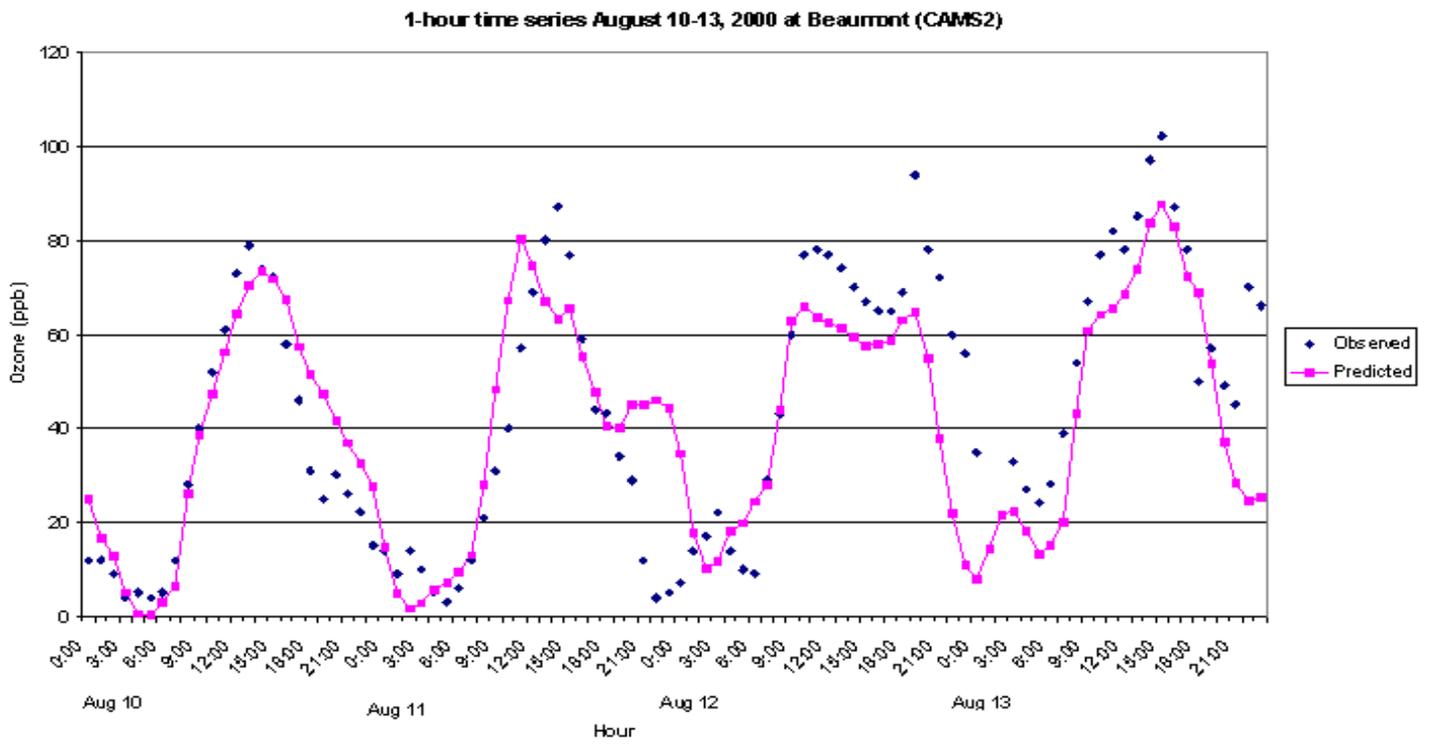


Figure K-2 1-hour Ozone Time Series August 10-13, 2000 at CAMS2

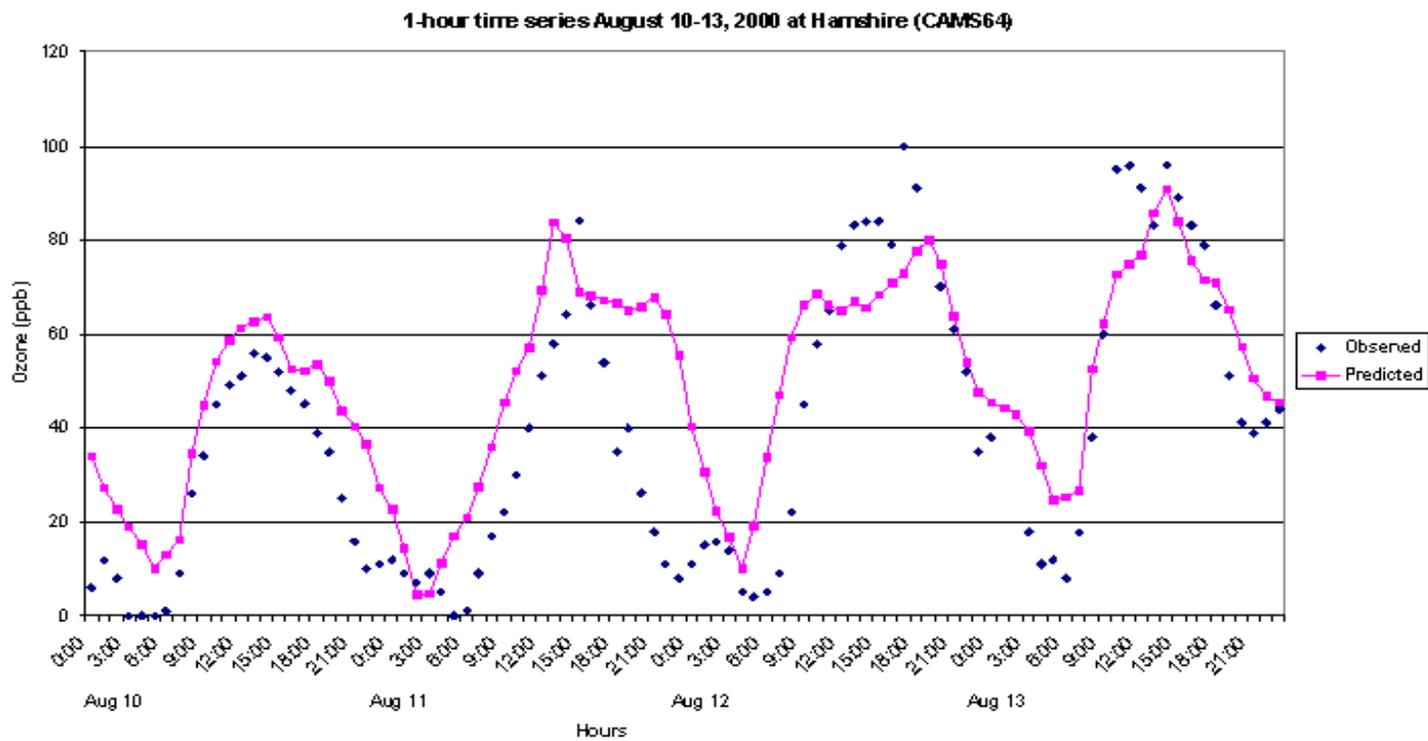


Figure K-3 1-hour Ozone Time Series August 10-13, 2000 at CAMS64

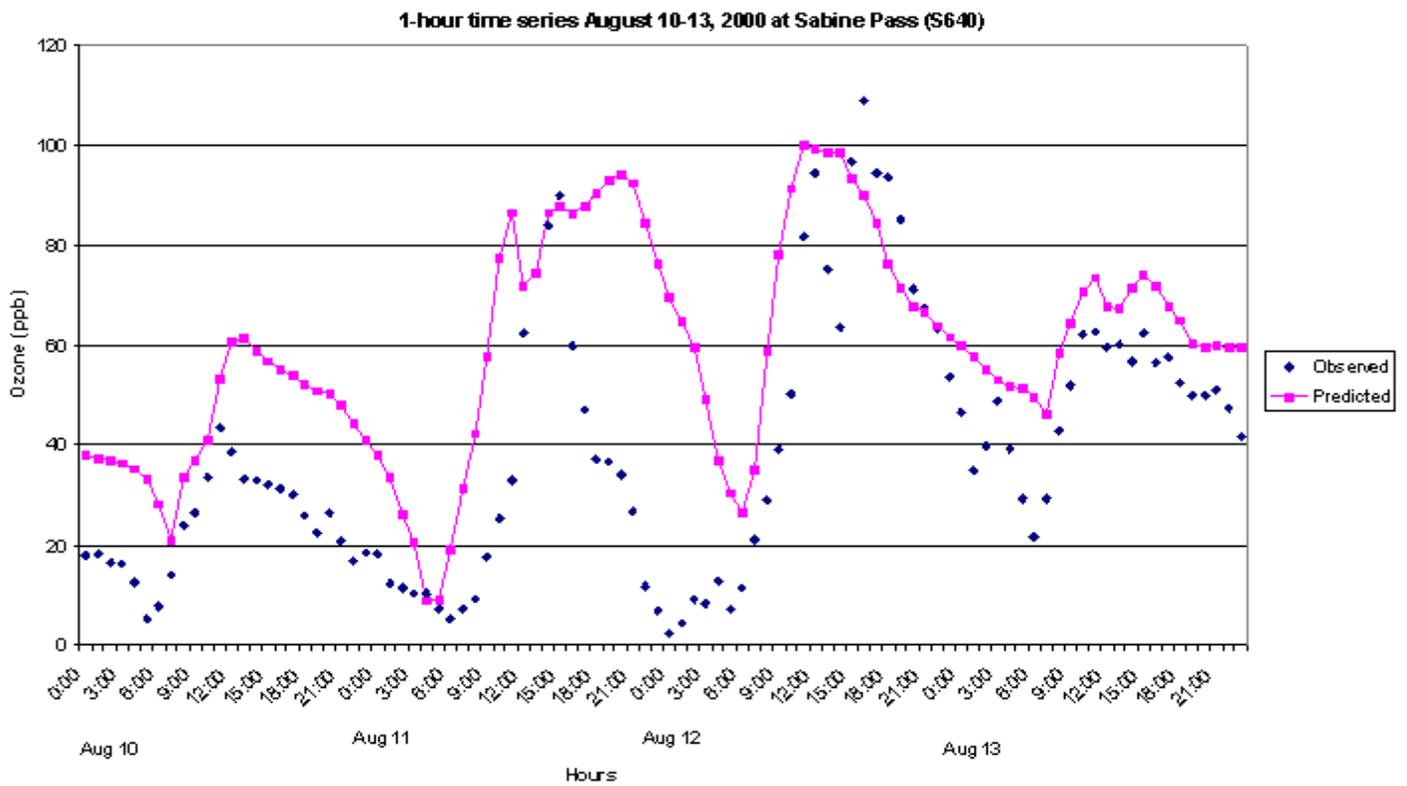


Figure K-4 1-hour Ozone Time Series August 10-13, 2000 at S640

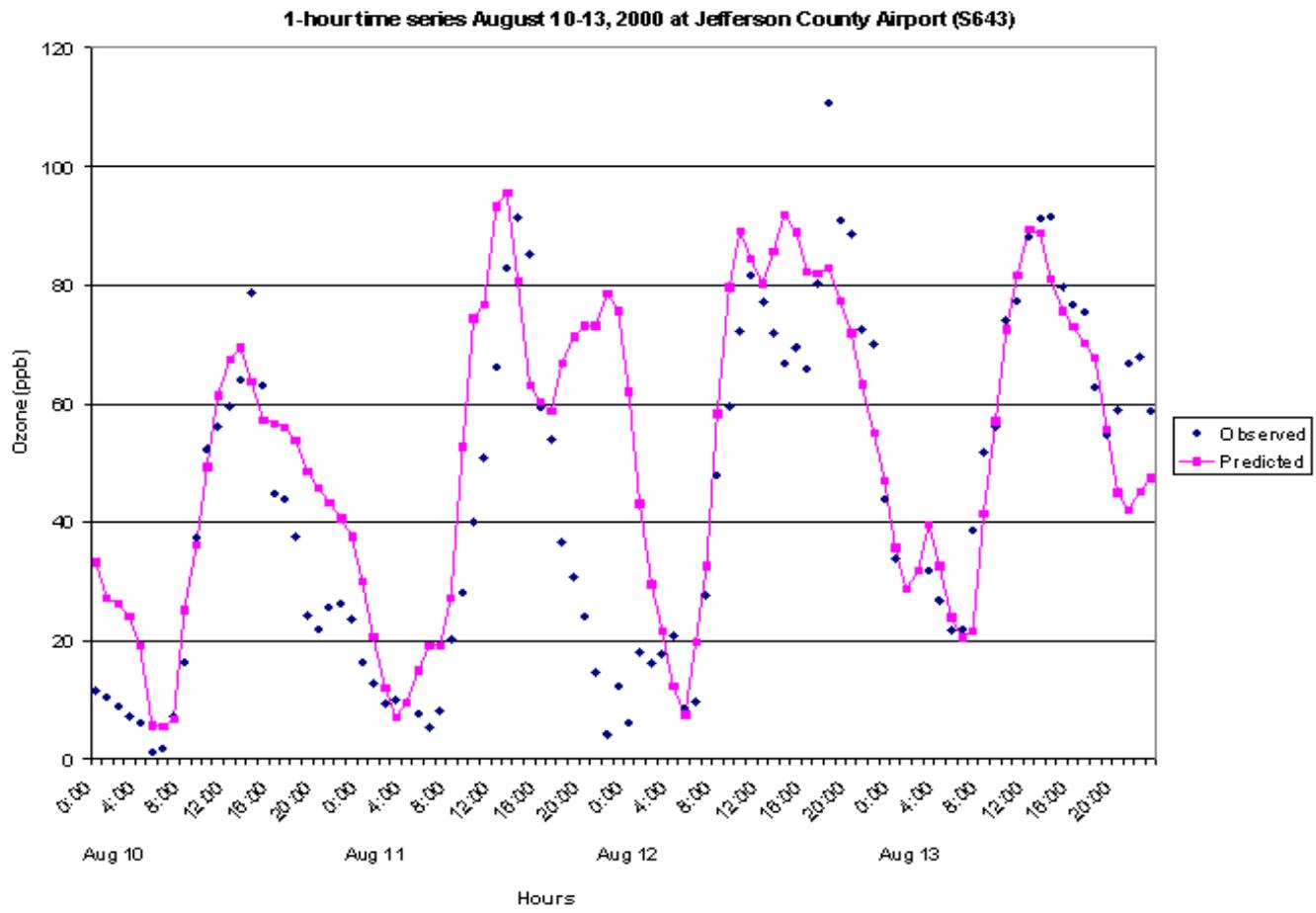


Figure K-5 1-hour Ozone Time Series August 10-13, 2000 at S643

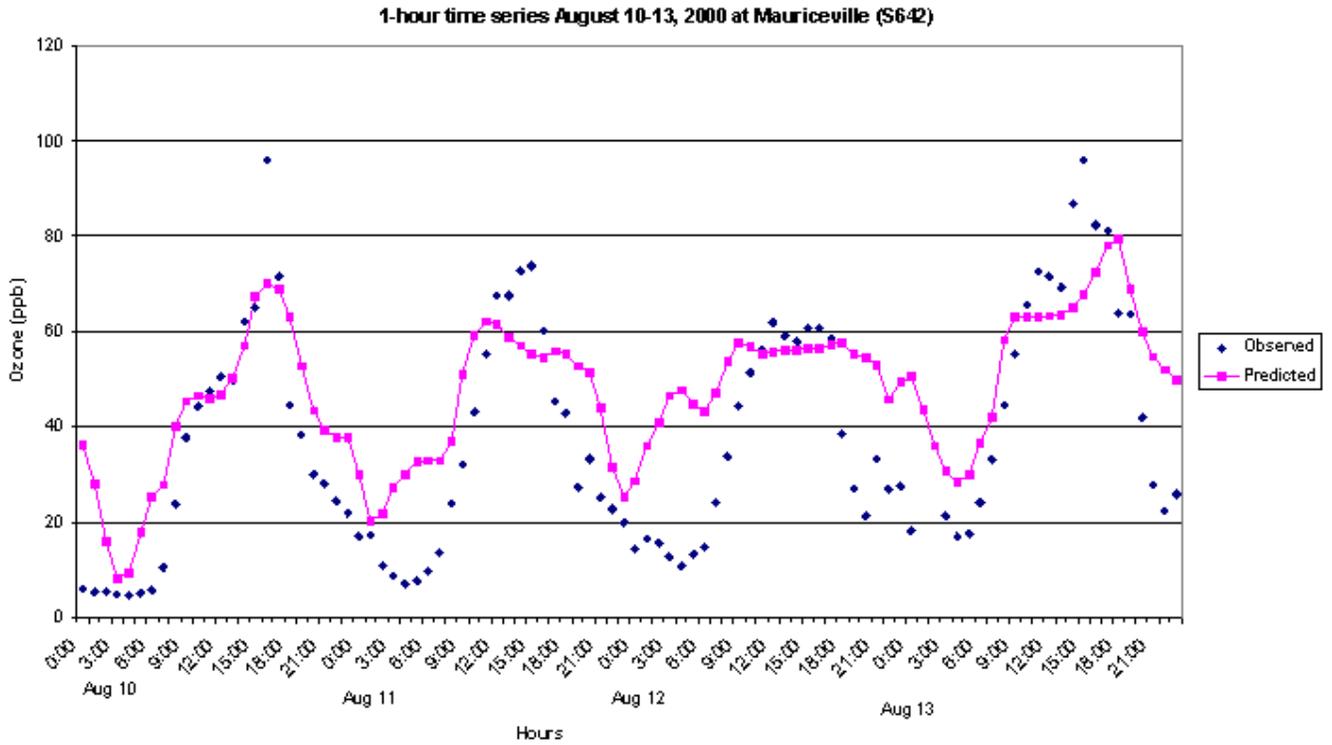


Figure K-6 1-hour Ozone Time Series August 10-13, 2000 at S642

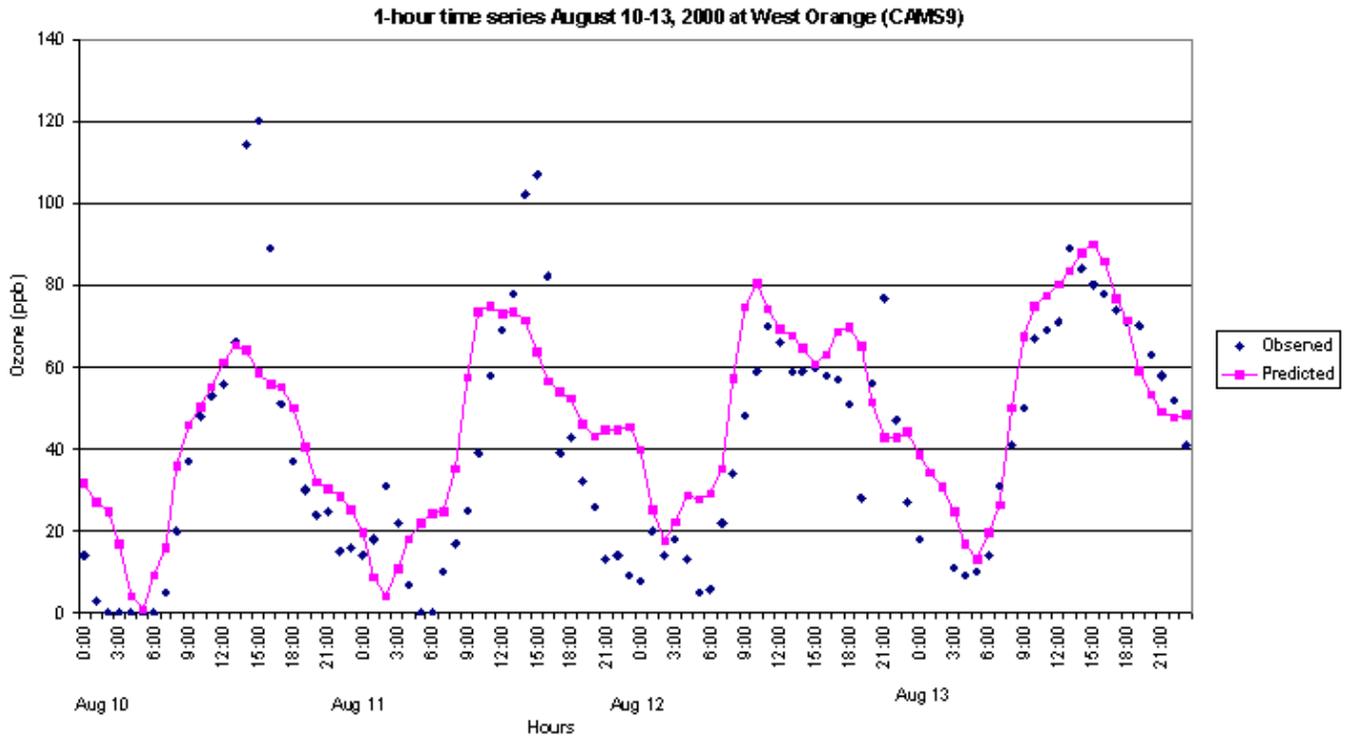


Figure K-7 1-hour Ozone Time Series August 10-13, 2000 at CAM59

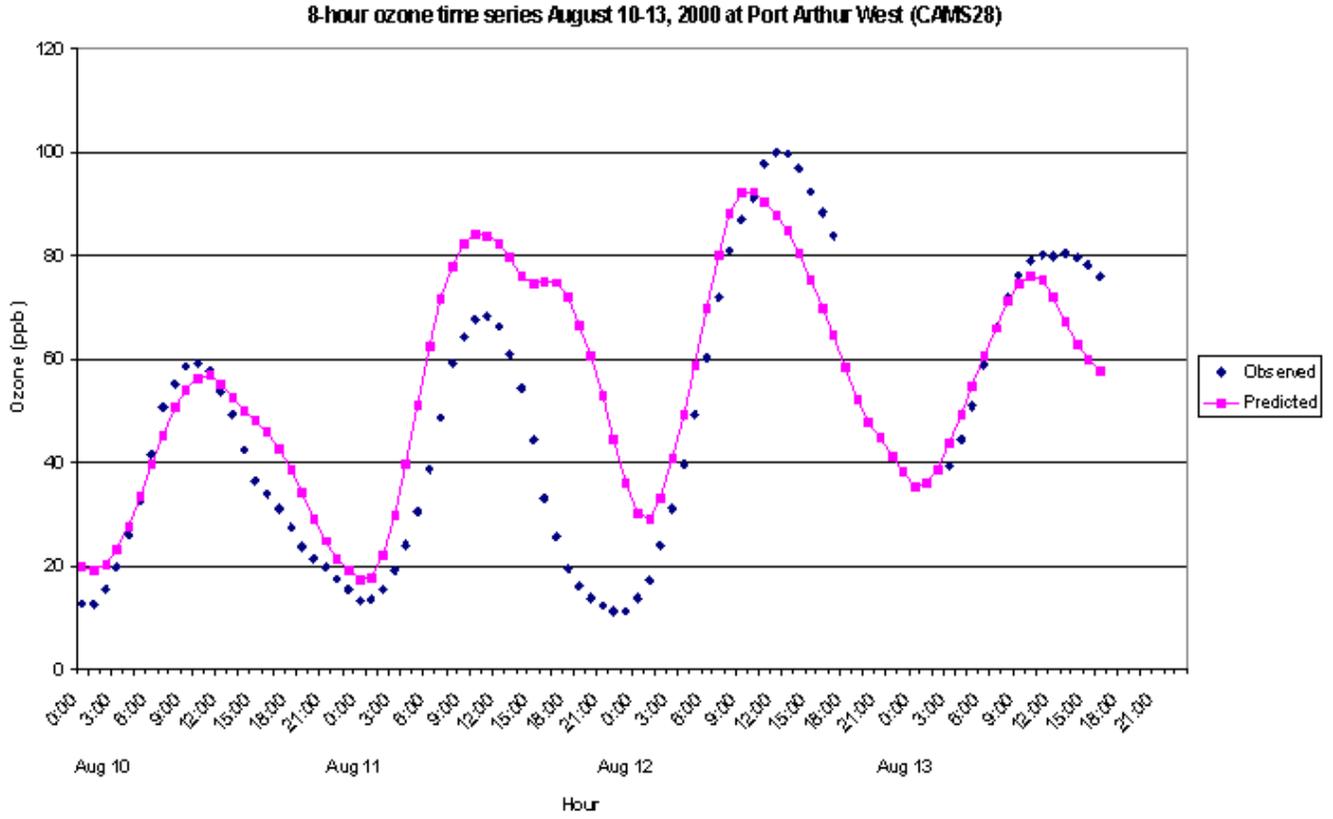
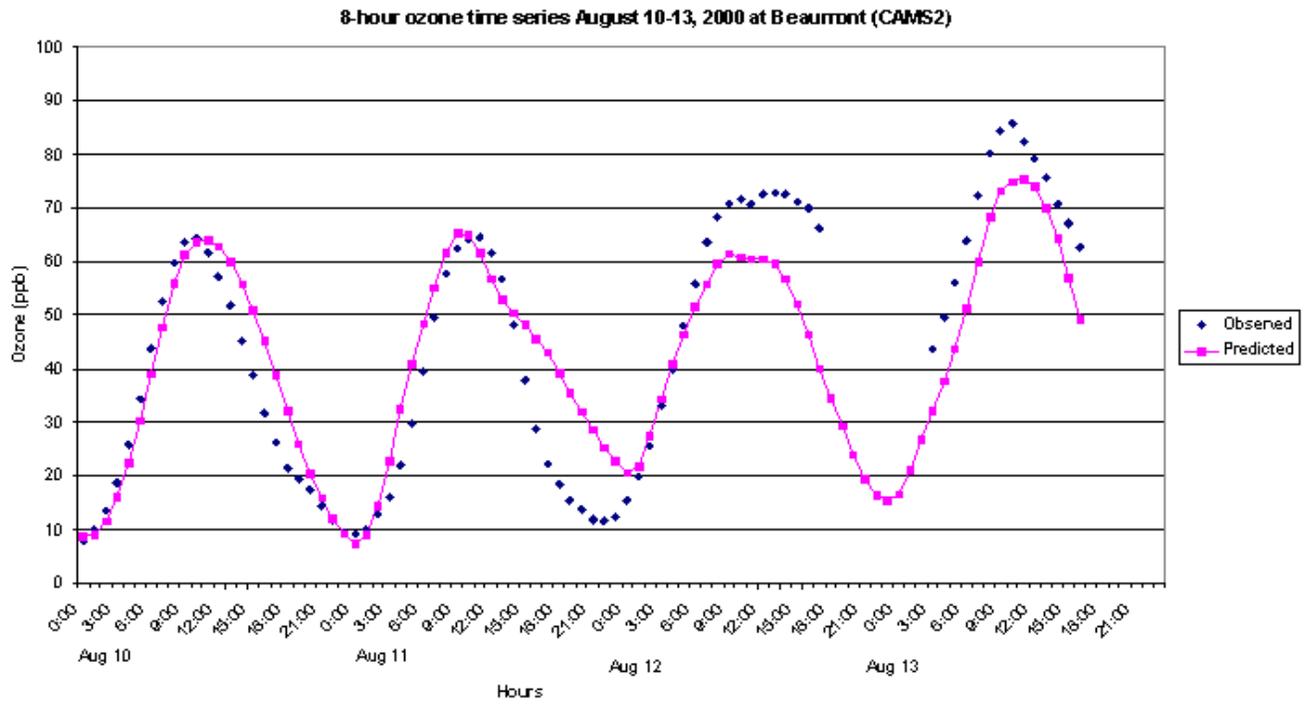


Figure K-8 8-hour Ozone Time Series August 10-13, 2000 at CAMS28

Figure K-9 8-hour Ozone Time Series August 10-13, 2000 at CAMS2



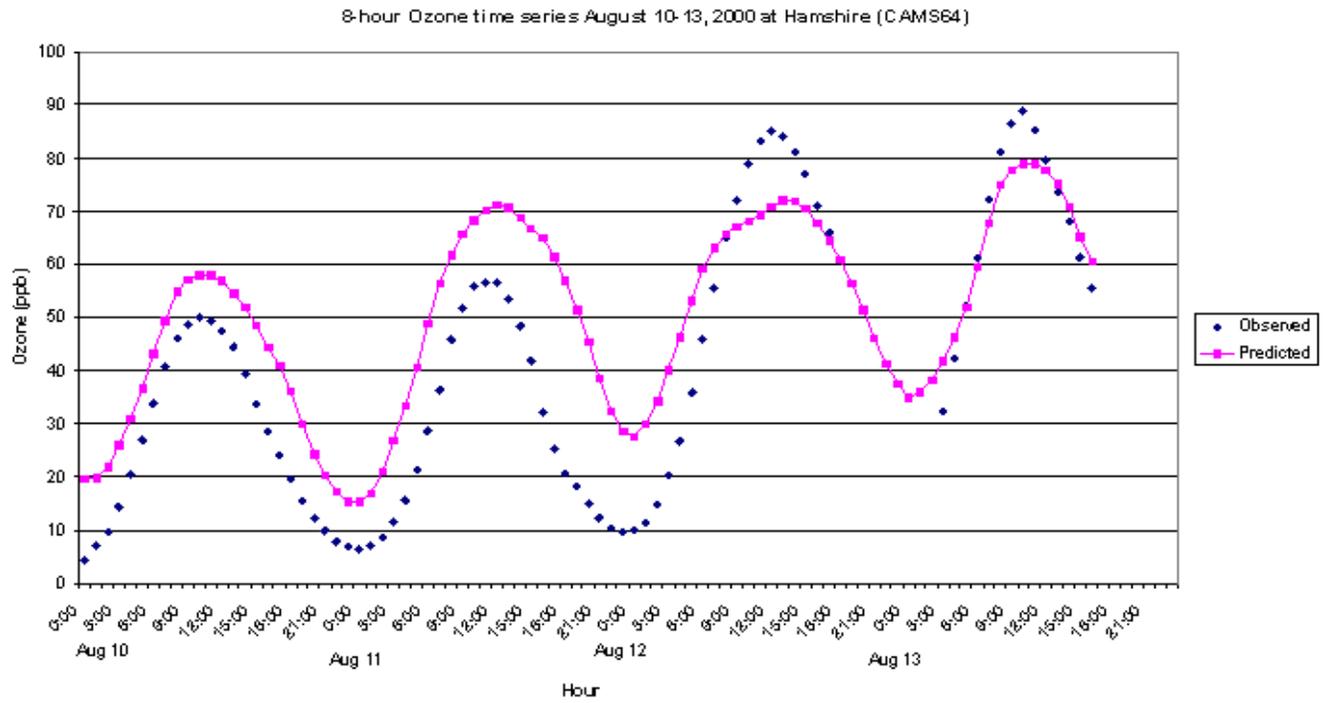


Figure K-10 8-hour Ozone Time Series August 10-13, 2000 at CAMS64

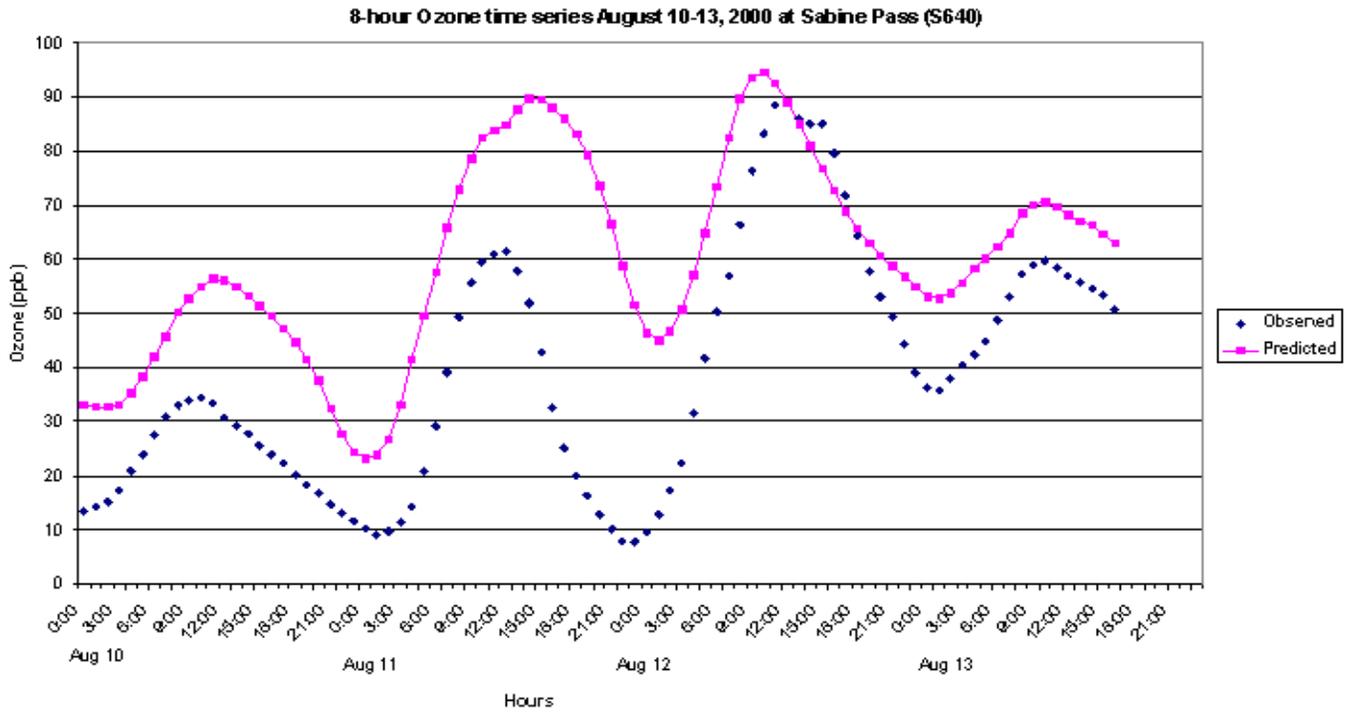


Figure K-11 8-hour Ozone Time Series August 10-13, 2000 at S640

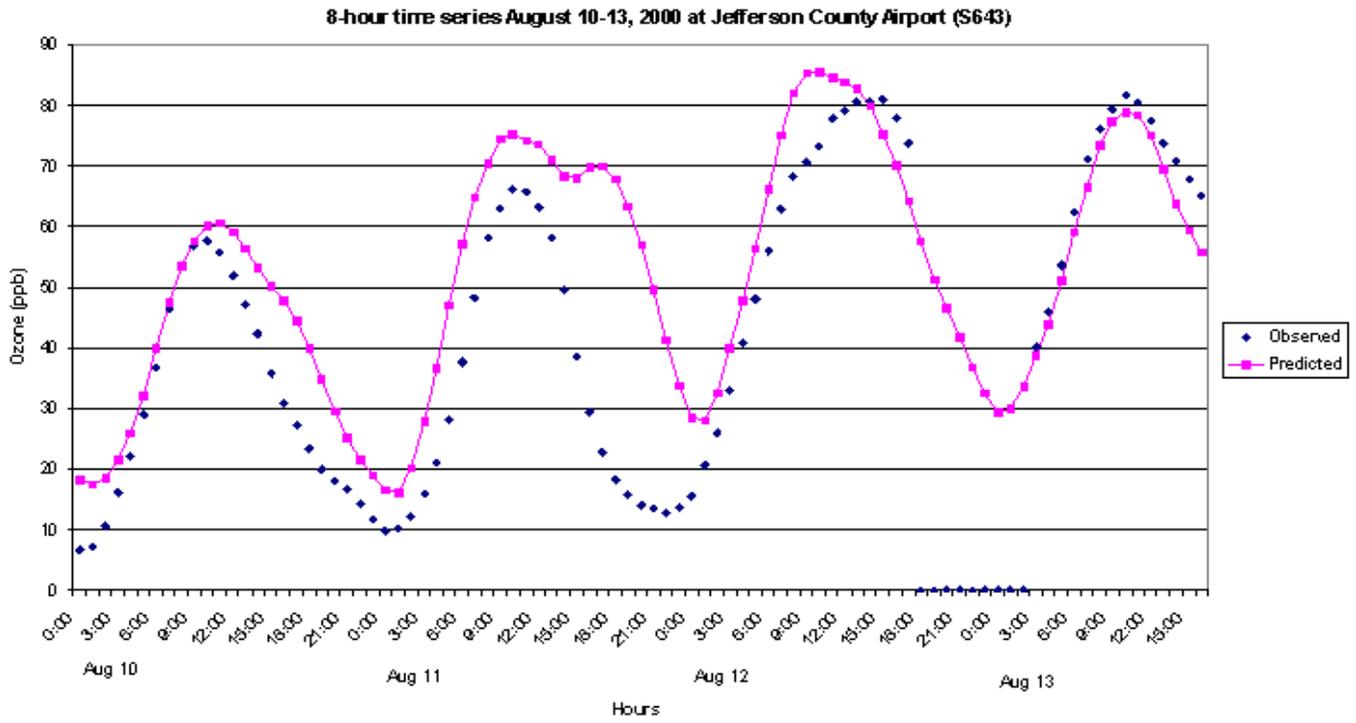


Figure K-12 8-hour Ozone Time Series August 10-13, 2000 at S643

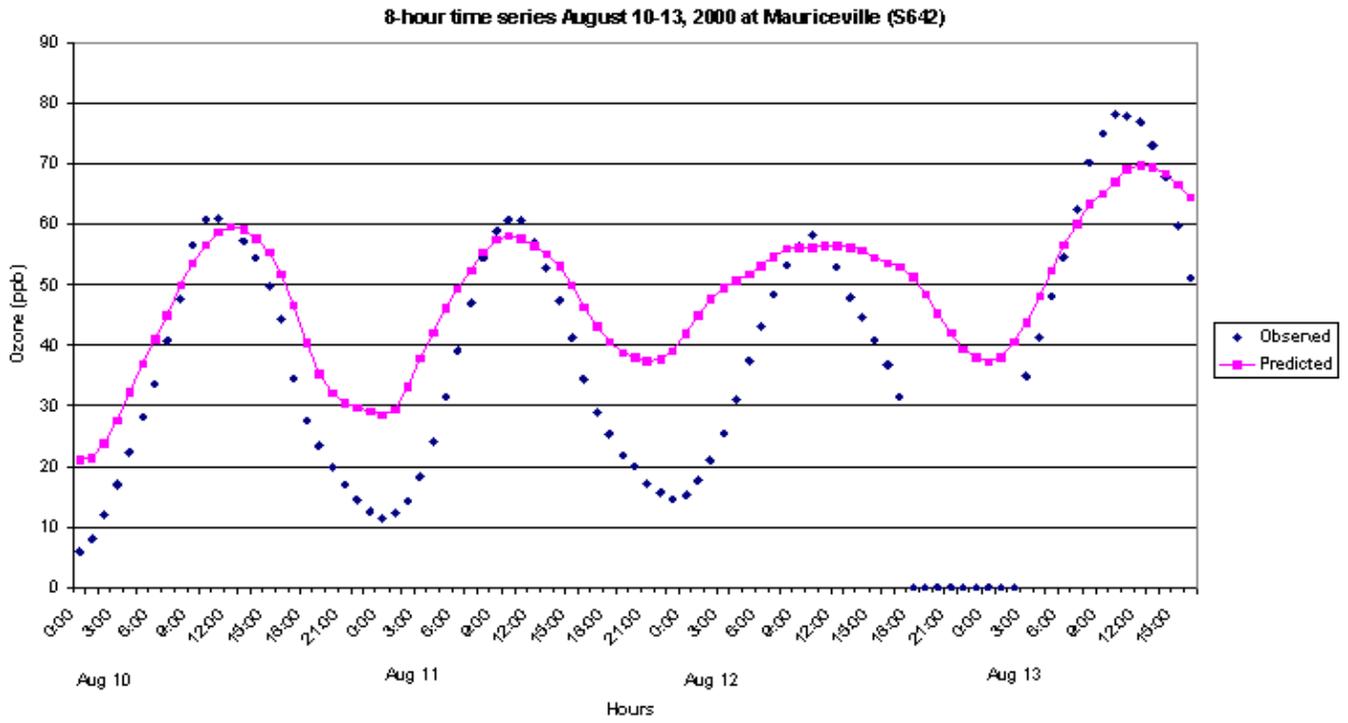


Figure K-13 8-hour Ozone Time Series August 10-13, 2000 at S642

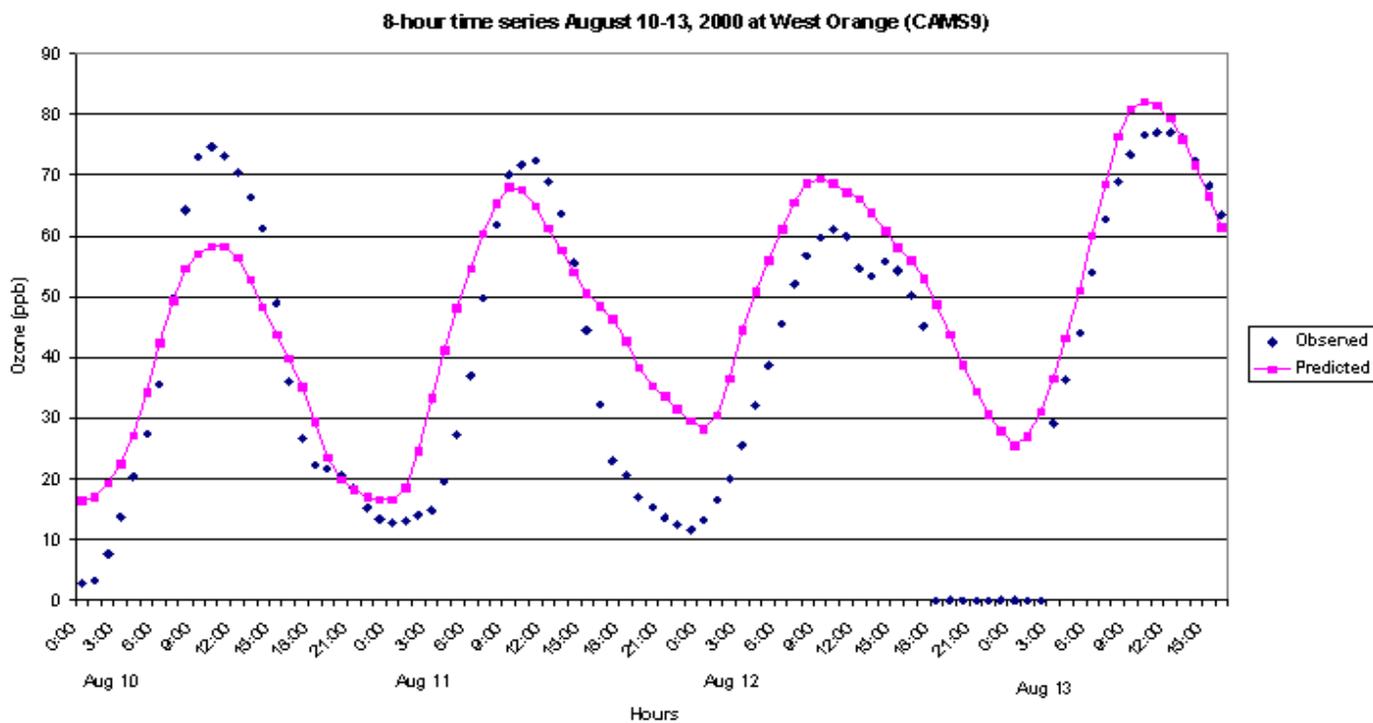


Figure K-14 8-hour Ozone Time Series August 10-13, 2000 at CAM9

1-hour Ozone time series August 28- September 1, 2000 at Port Arthur West (CAMS28)

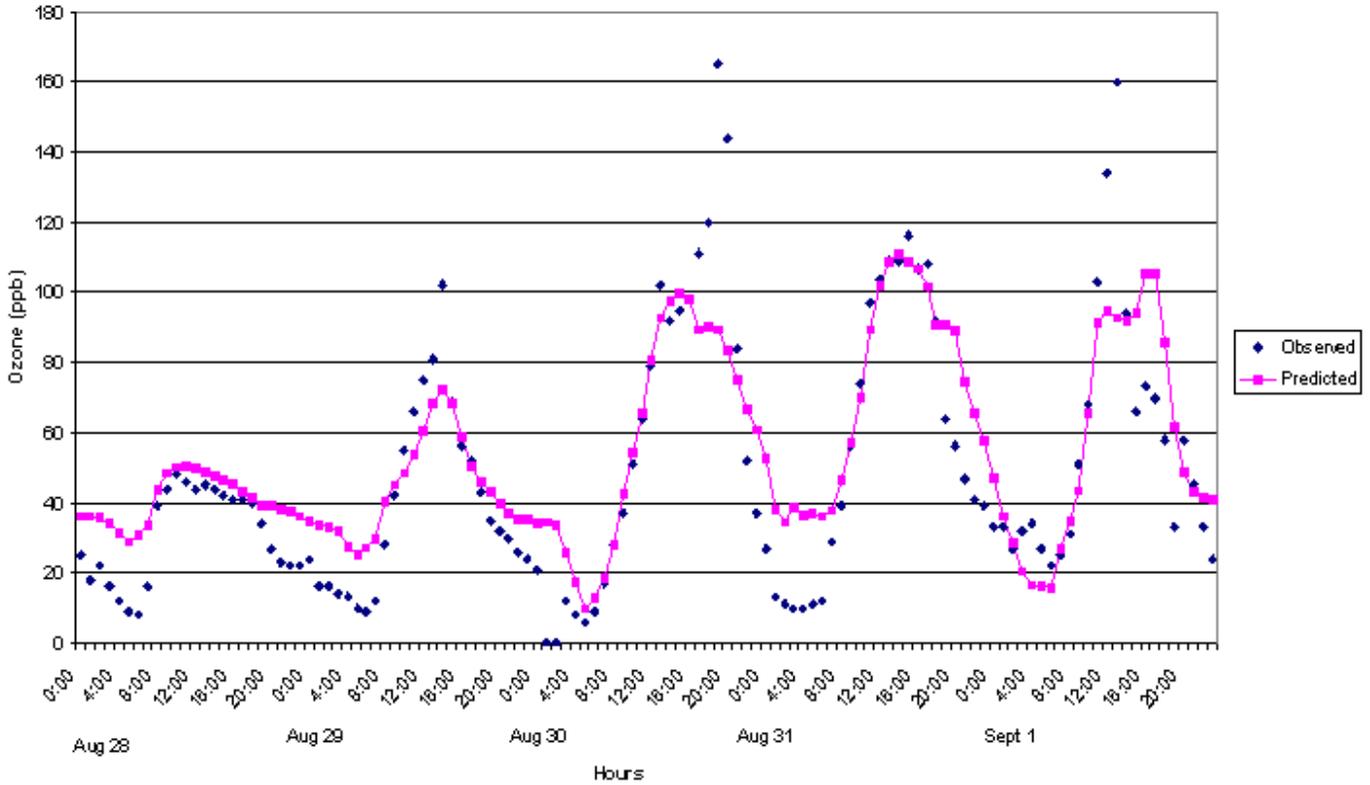


Figure K-15 1-hour Ozone Time Series August 28-September 1, 2000 at CAMS28

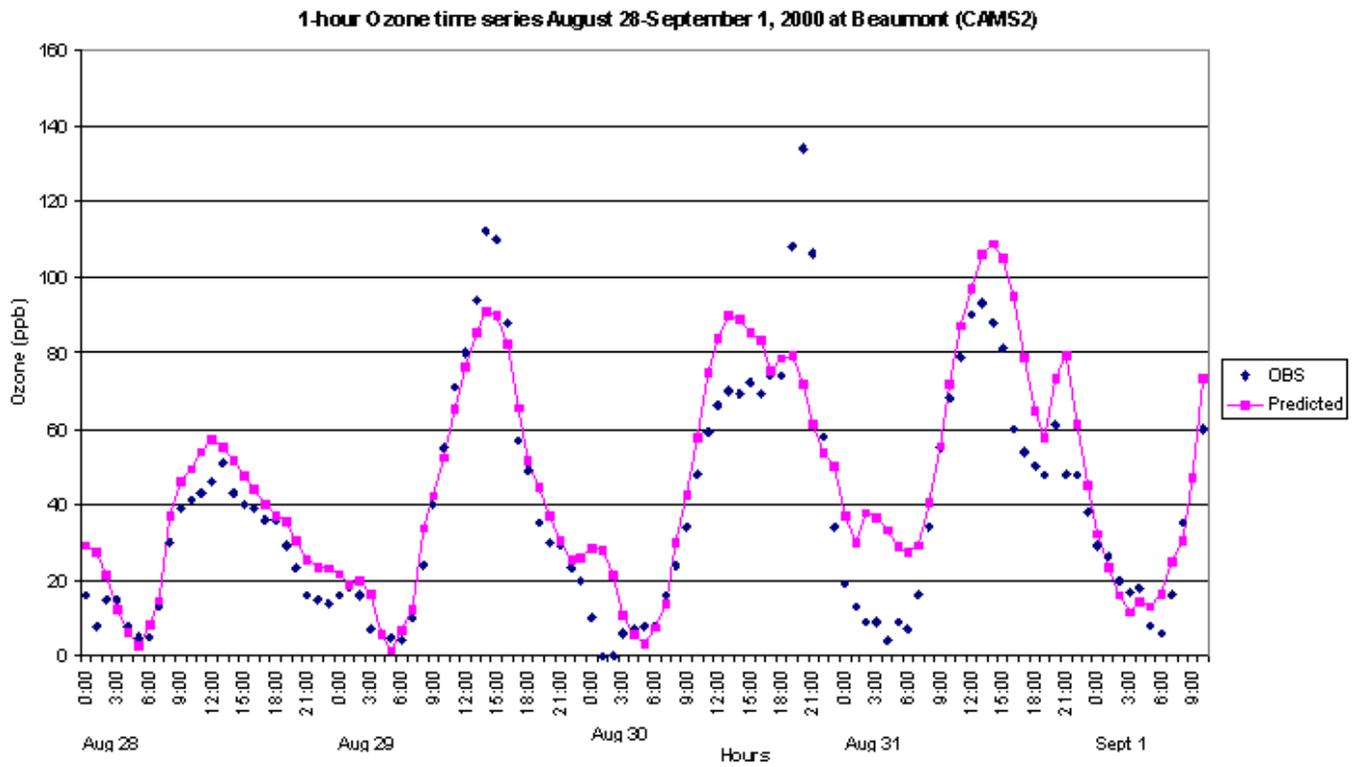


Figure K-16 1-hour Ozone Time Series August 28 - September 1, 2000 at CAMS2

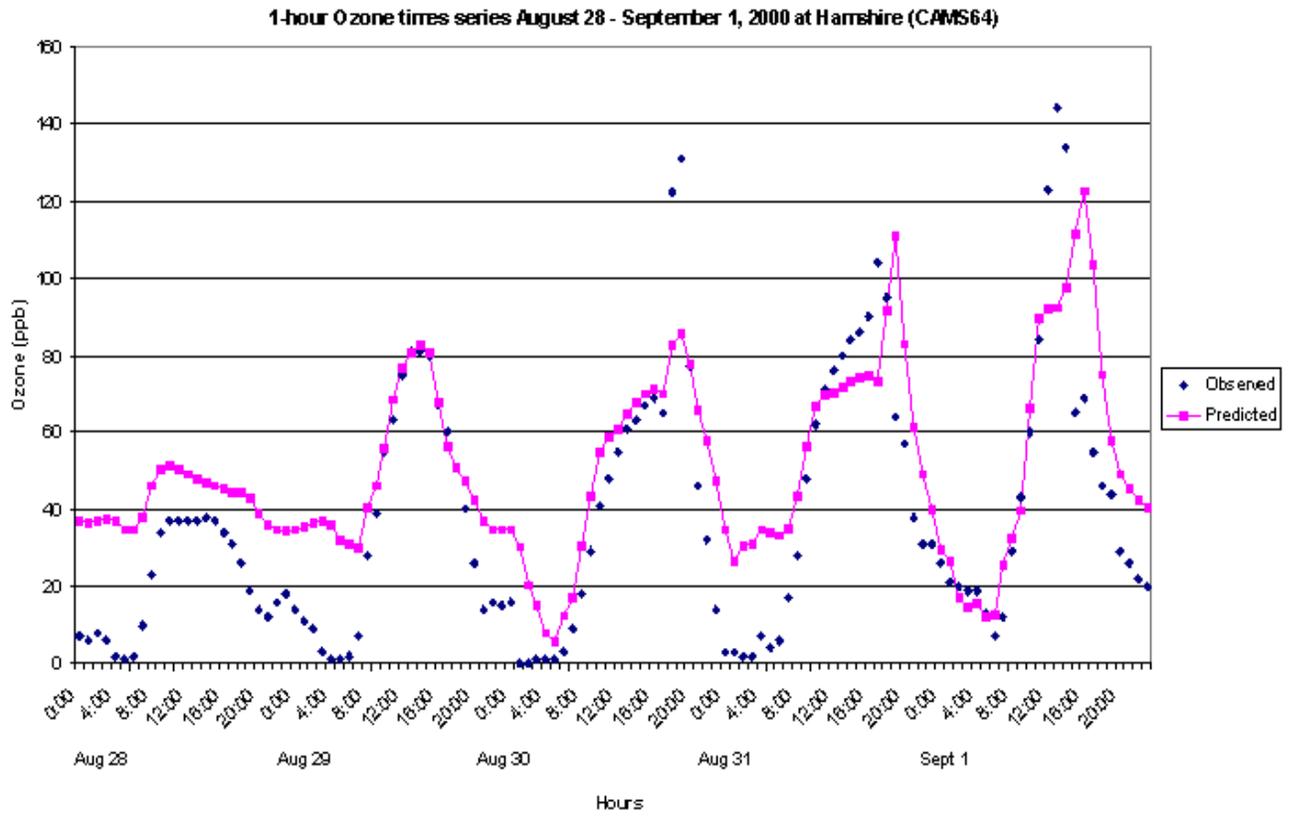


Figure K-17 1-hour Ozone Time Series August 28 - September 1, 2000 at CAMS64

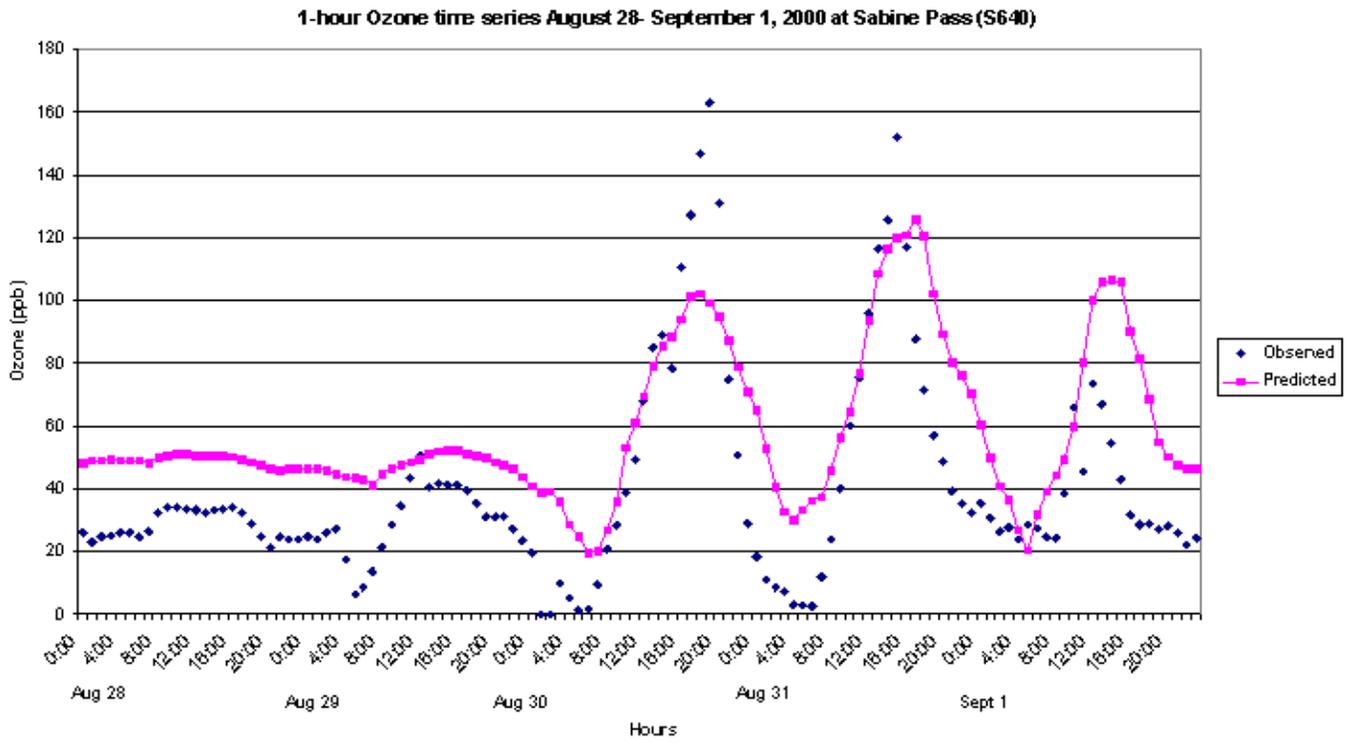


Figure K-18 1-hour Ozone Time Series August 28 - September 1, 2000 at S640

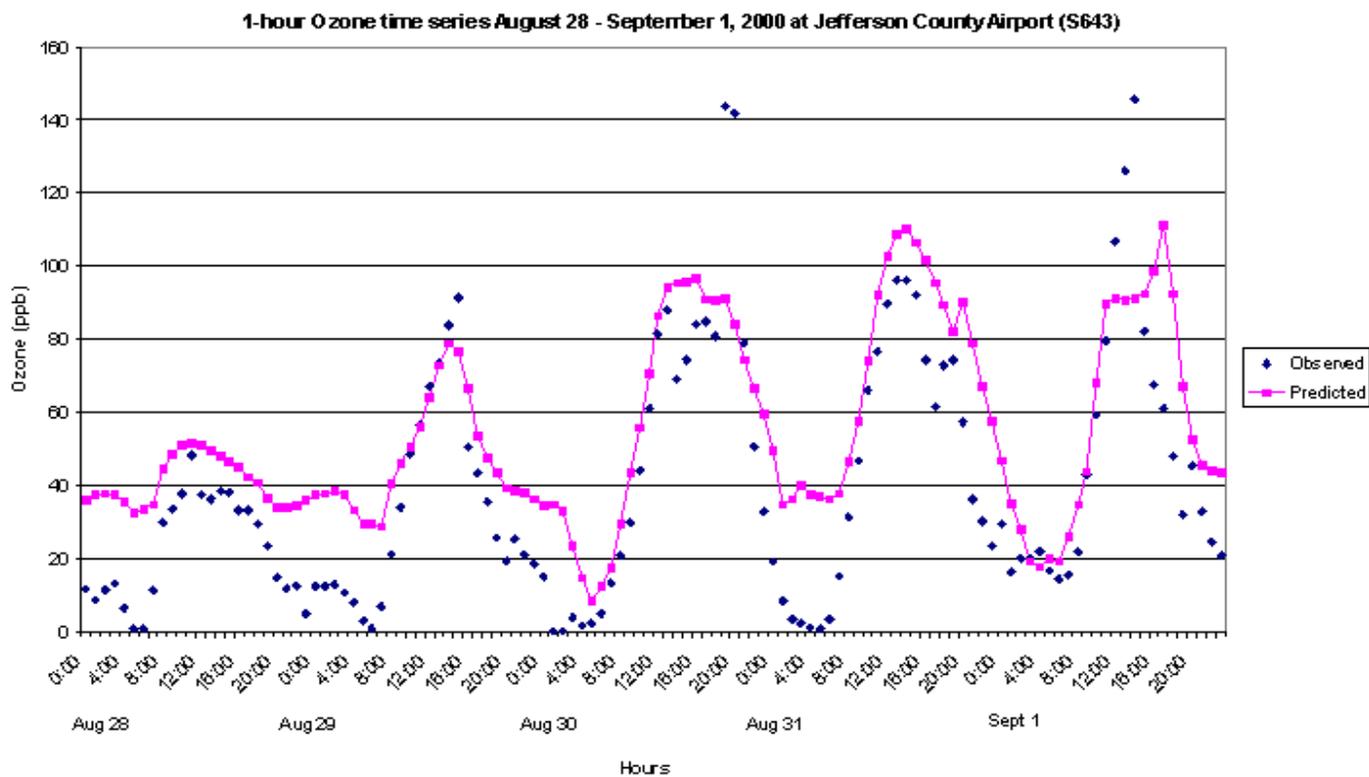


Figure K-19 1-hour Ozone Time Series August 28 - September 1, 2000 at S643

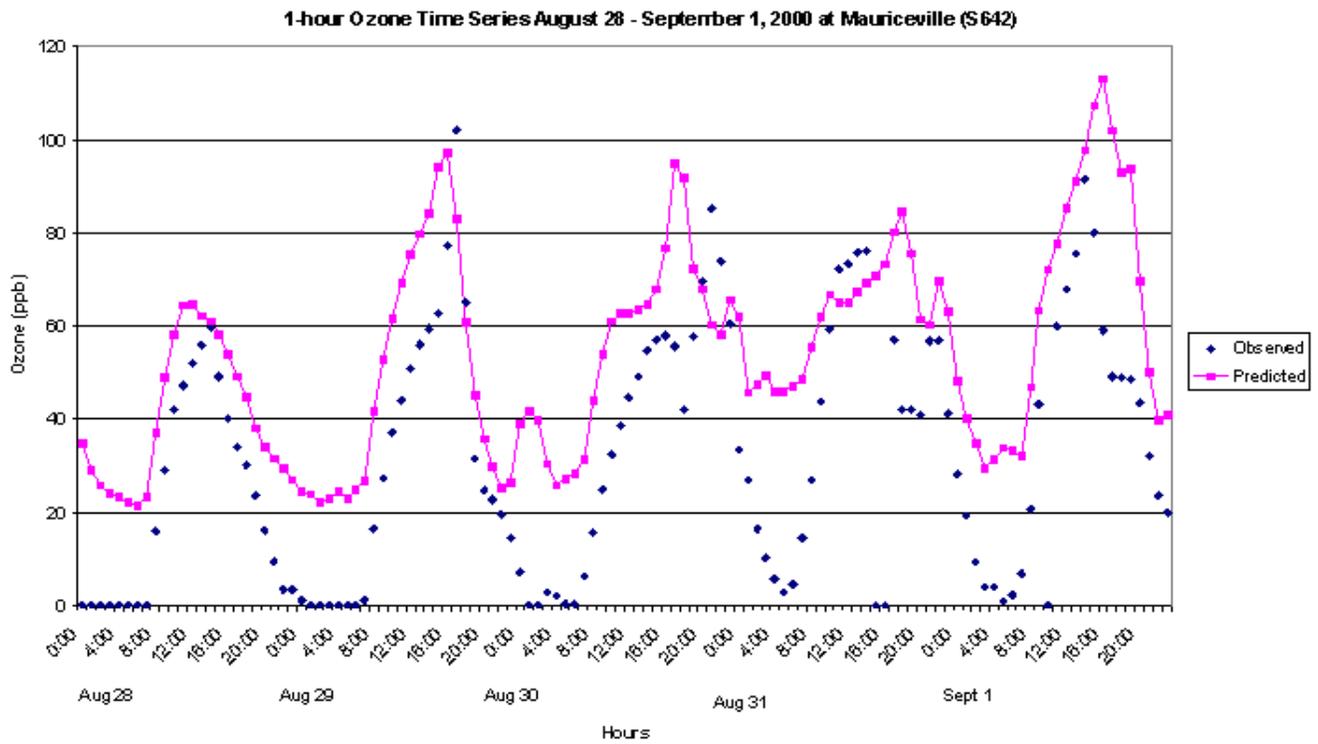


Figure K-20 1-hour Ozone Time Series August 28 - September 1, 2000 at S642

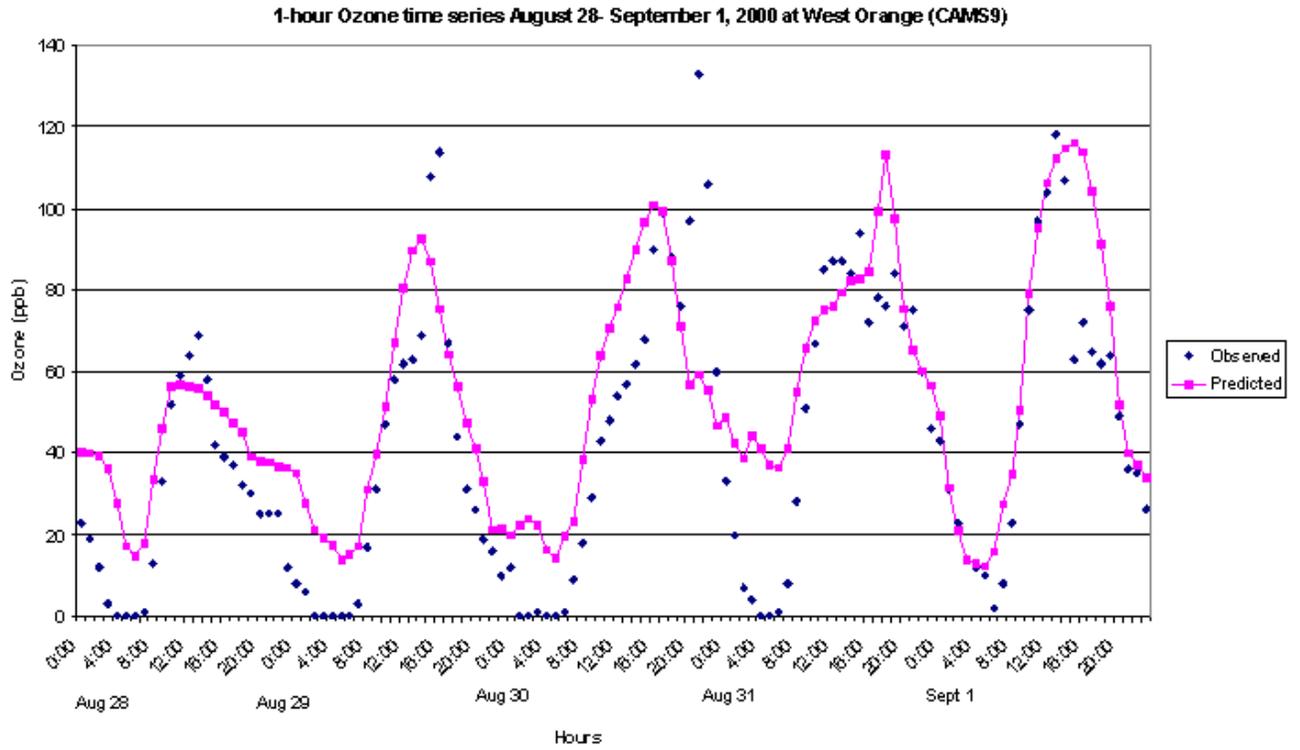
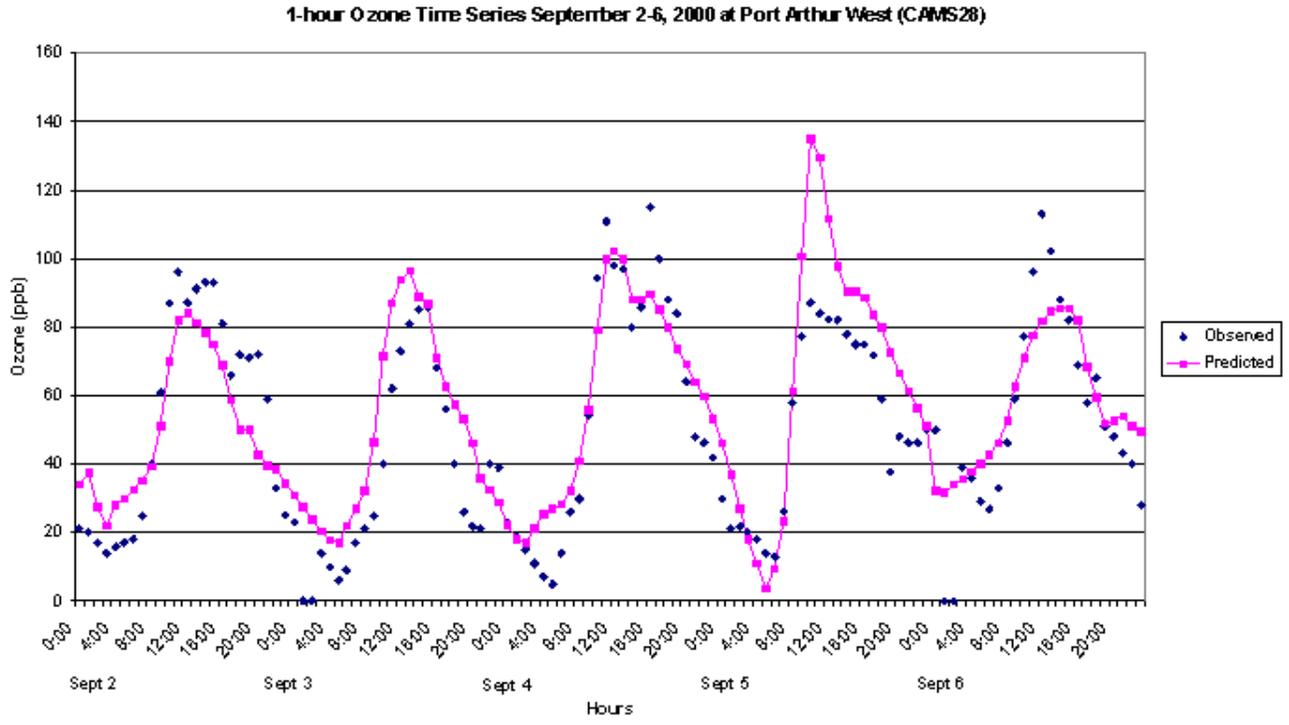


Figure K-21 1-hour Ozone Time Series August 28 - September 1, 2000 at CAM59

Figure K-22 1-hour Ozone Time Series September 2 - 6, 2000 at CAMS28



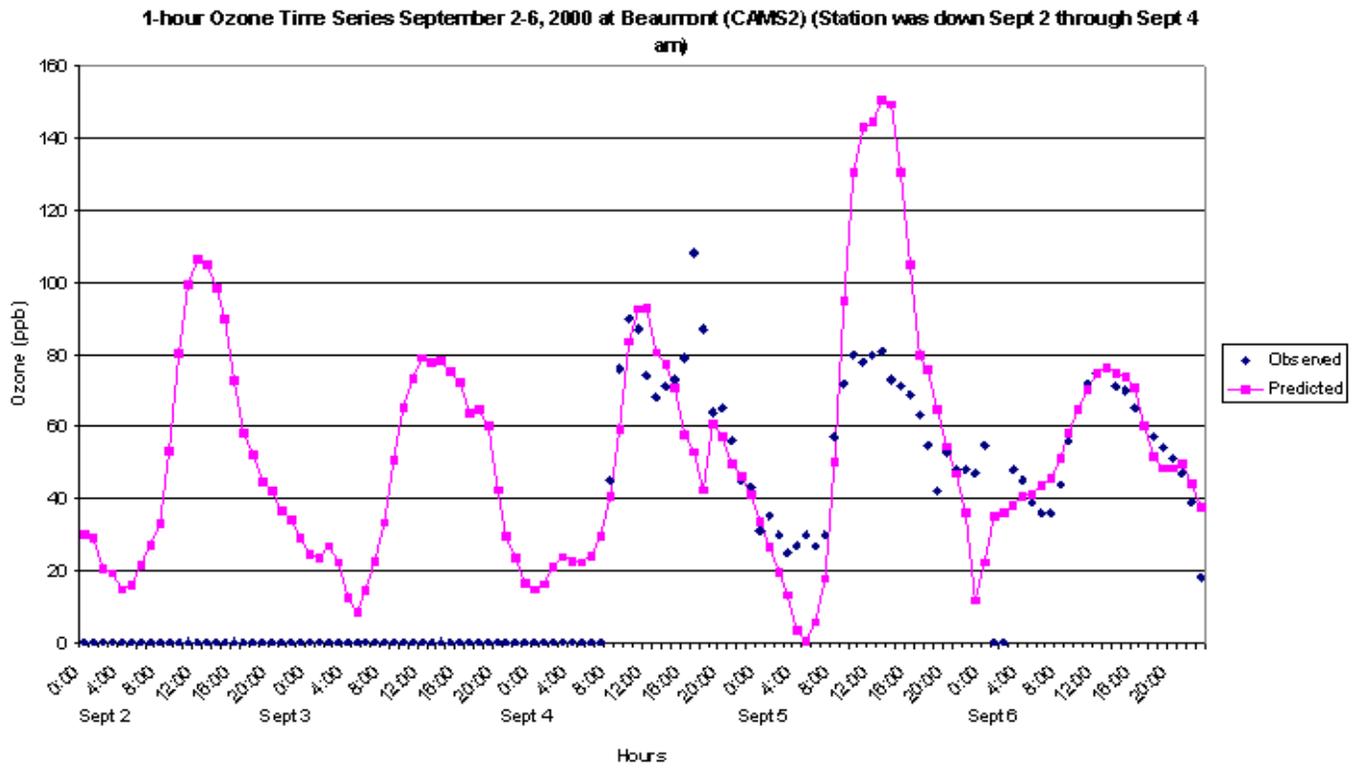


Figure K-23 1-hour Ozone Time Series September 2 - 6, 2000 at CAMS2

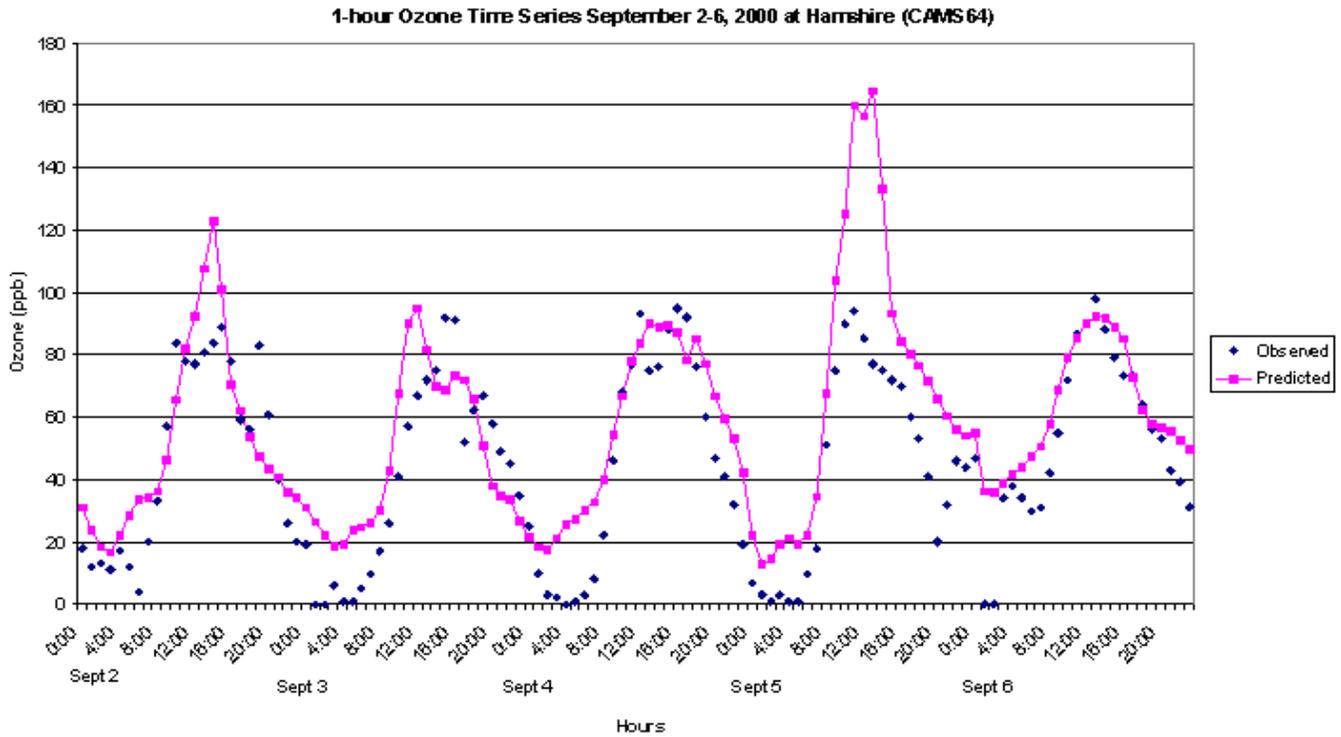


Figure K-24 1-hour Ozone Time Series September 2 - 6, 2000 at CAM564

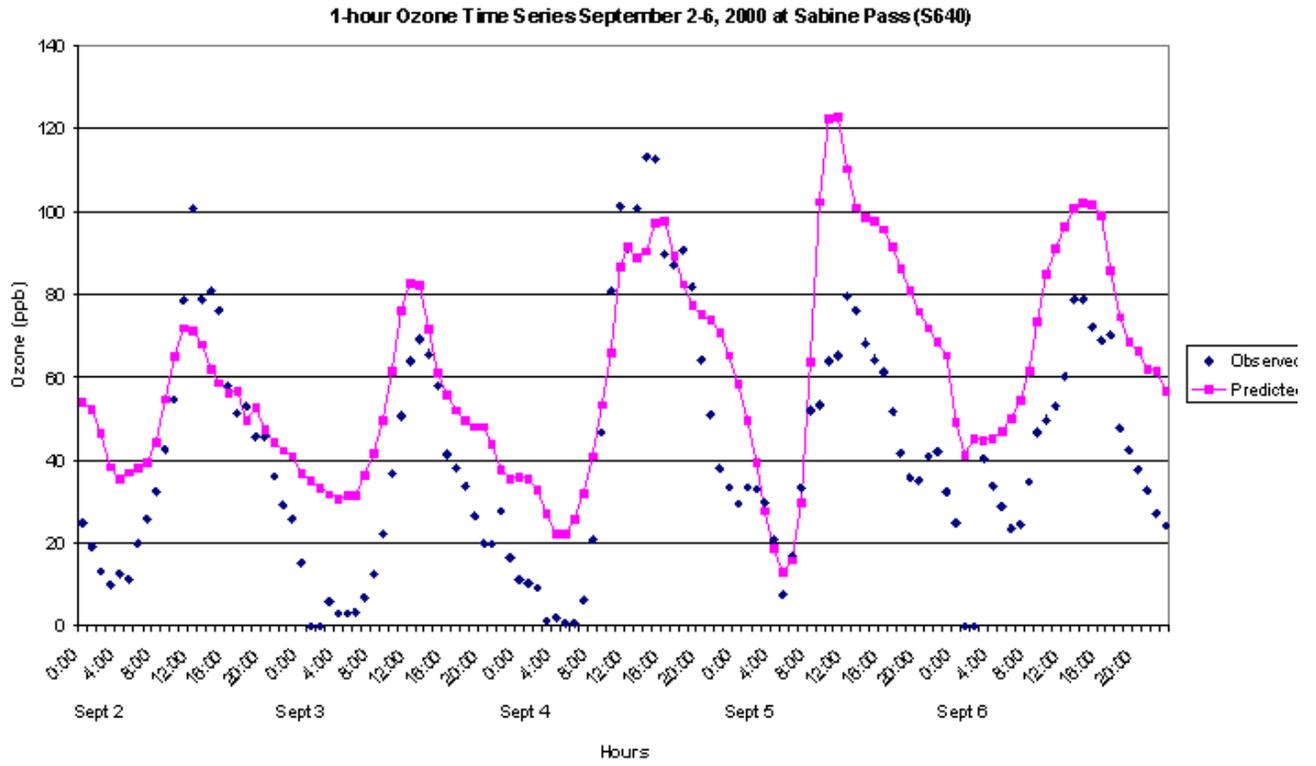


Figure K-25 1-hour Ozone Time Series September 2 - 6, 2000 at S640

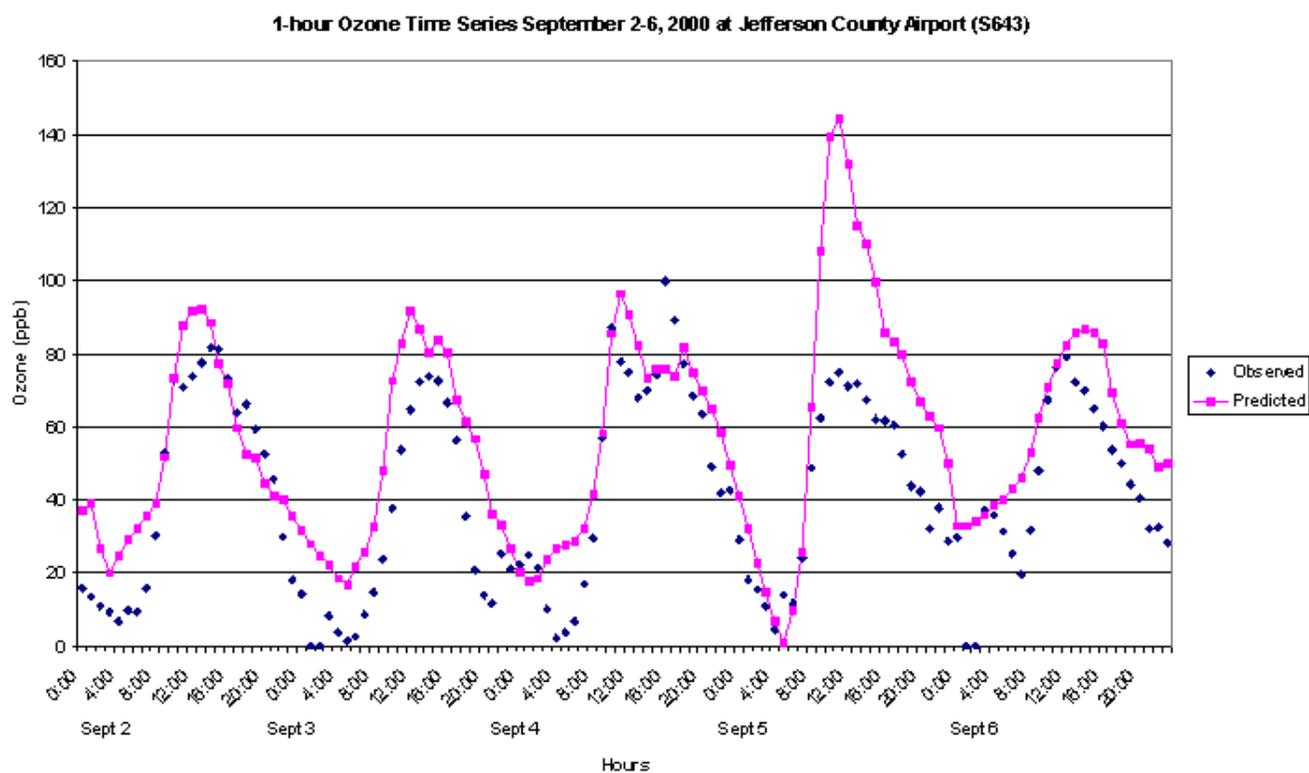


Figure K-26 1-hour Ozone Time Series September 2 - 6, 2000 at S643

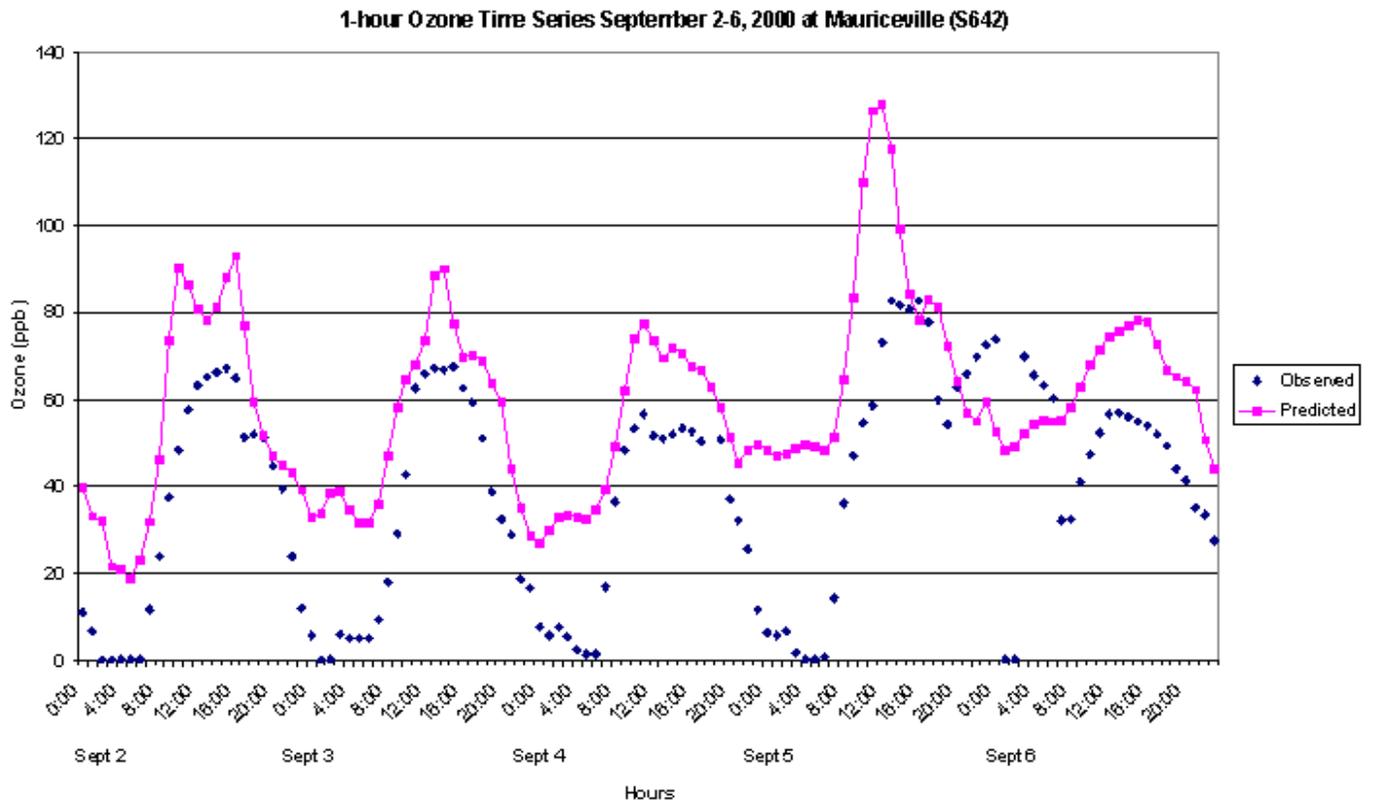


Figure K-27 1-hour Ozone Time Series September 2 - 6, 2000 at S642

1-hour Ozone Time Series September 2-6, 2000 at West Orange (CAM9)

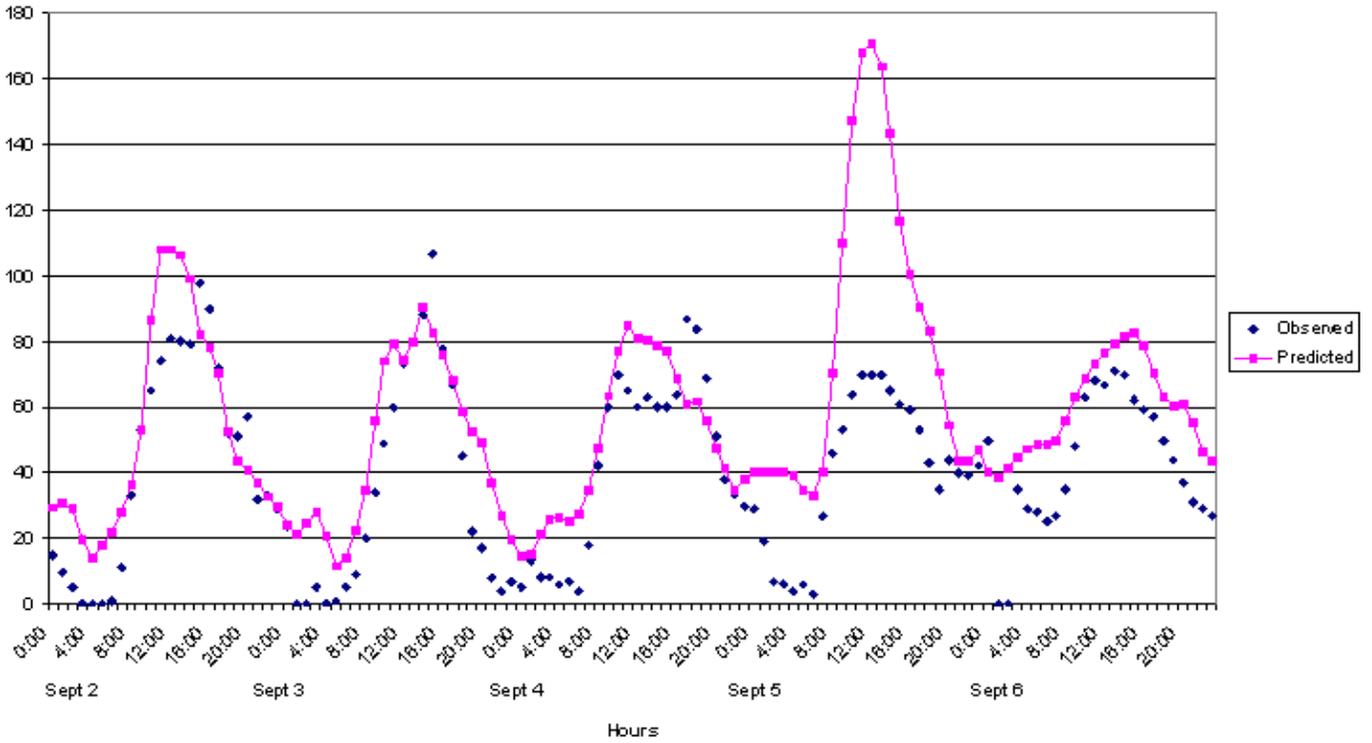


Figure K-28 1-hour Ozone Time Series September 2 - 6, 2000 at CAM9

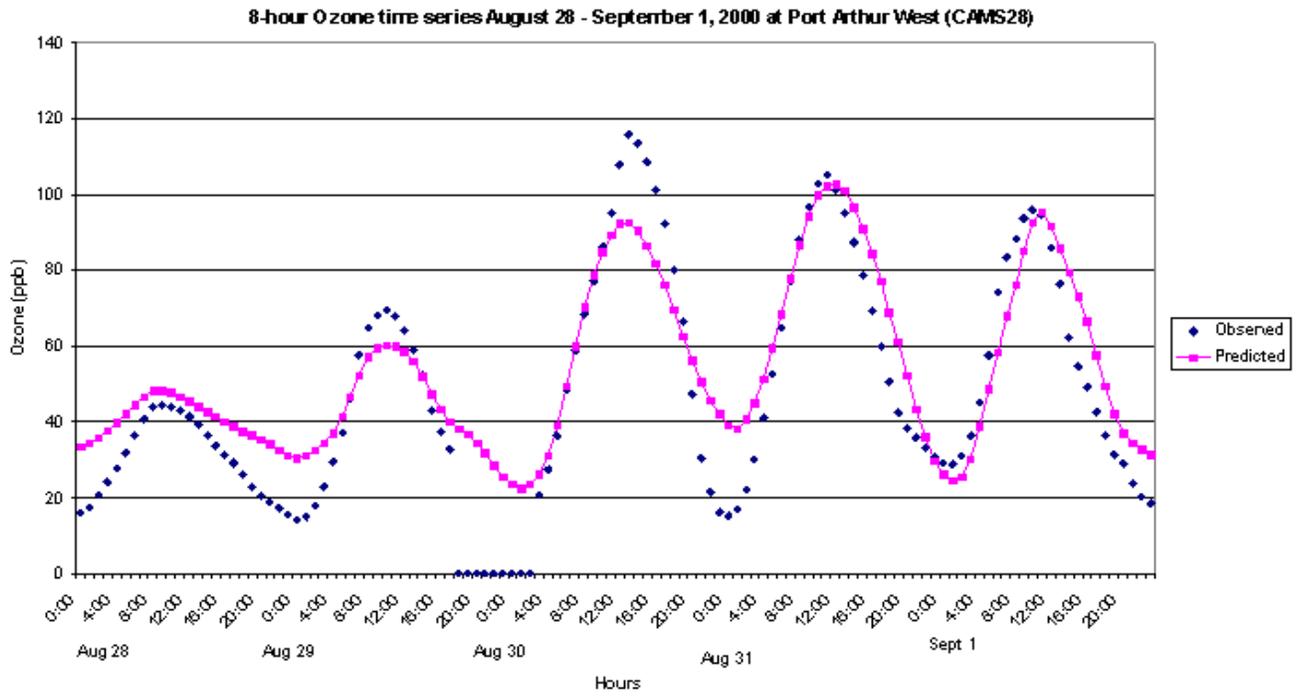


Figure K-29 8-hour Ozone Time Series August 28 - September 1, 2000 at CAMS28

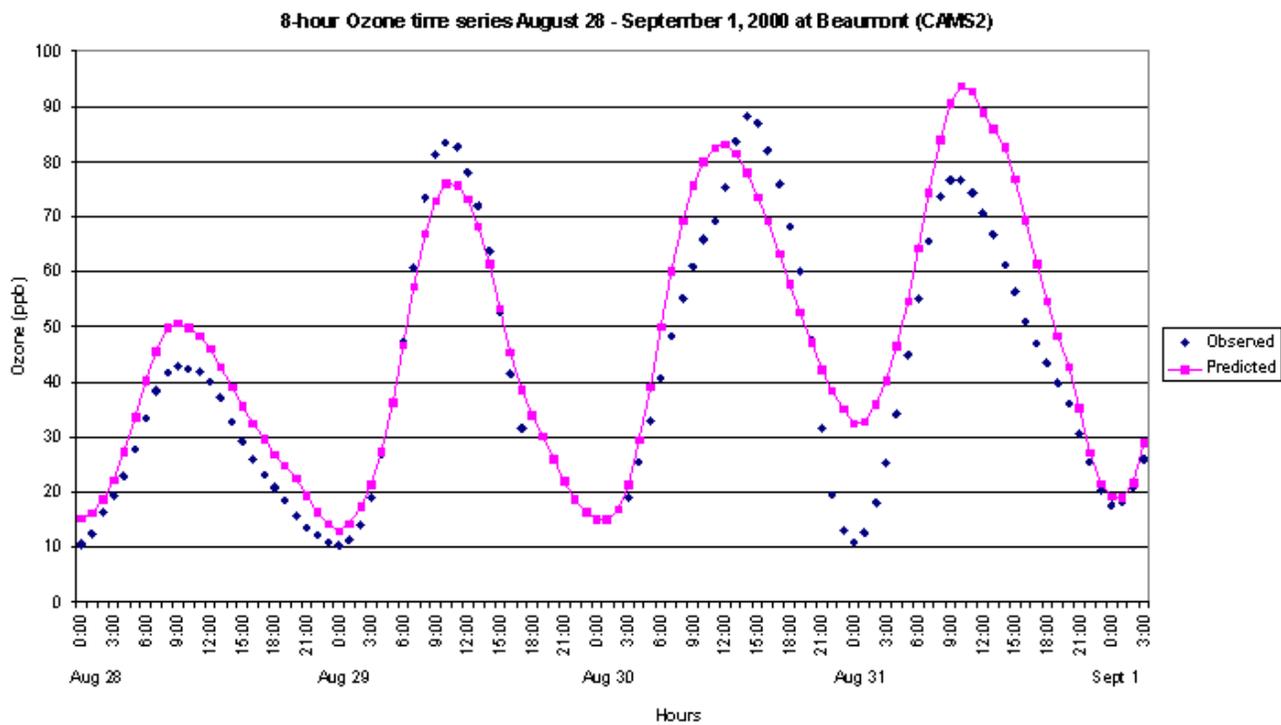


Figure K-30 8-hour Ozone Time Series August 28 - September 1, 2000 at CAMS2

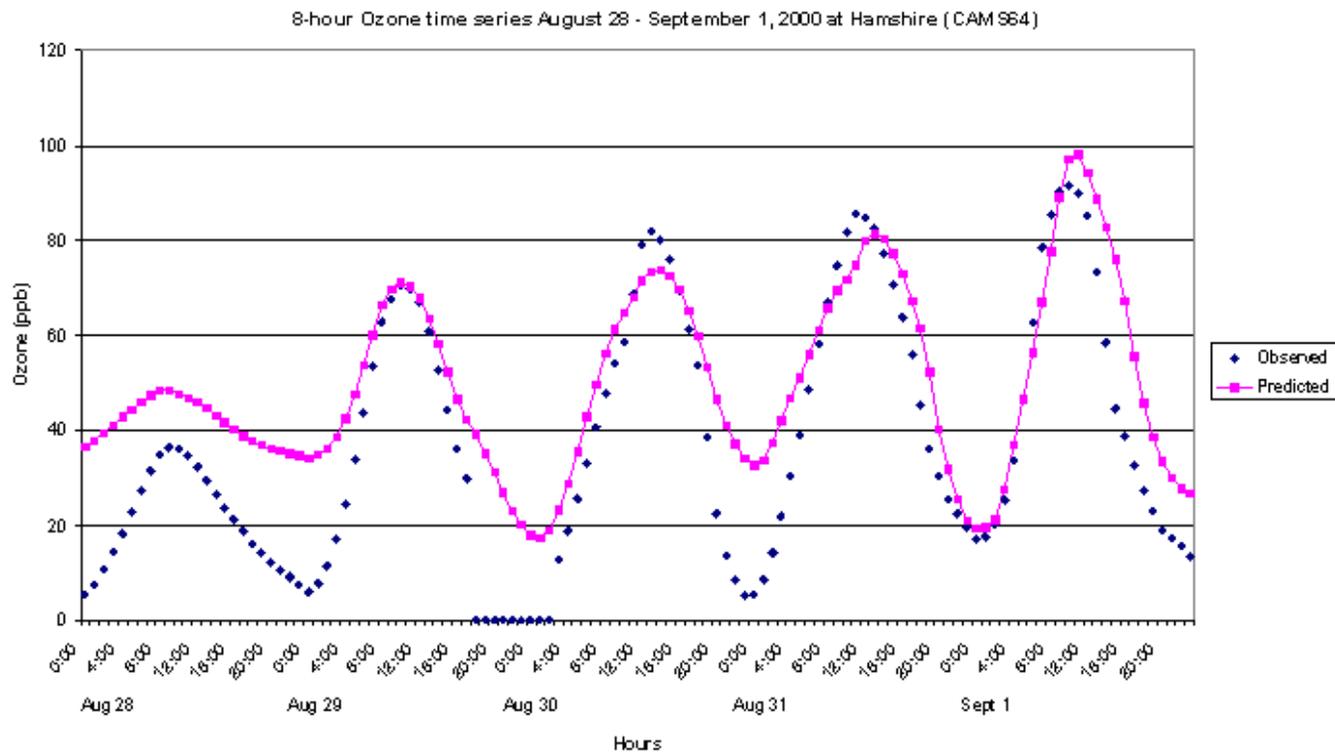


Figure K-31 8-hour Ozone Time Series August 28 - September 1, 2000 at CAMS64

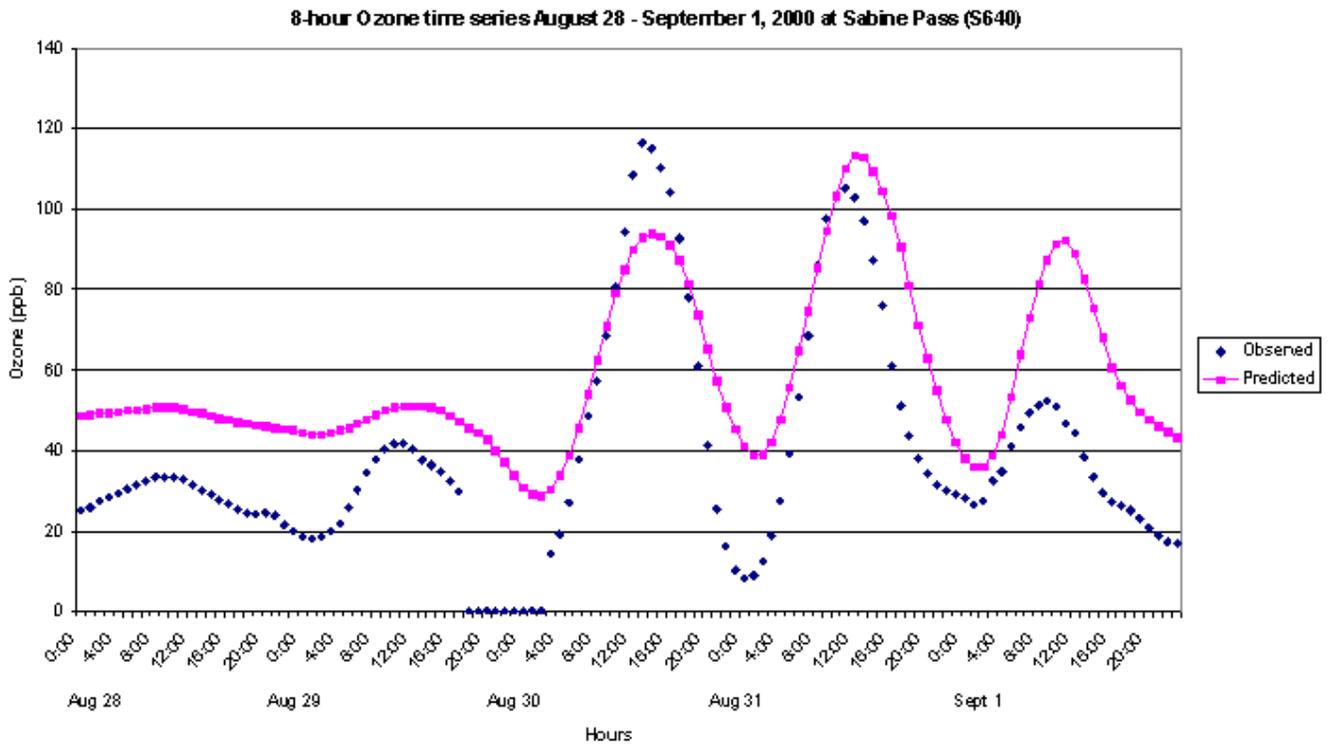


Figure K-32 8-hour Ozone Time Series August 28 - September 1, 2000 at S640

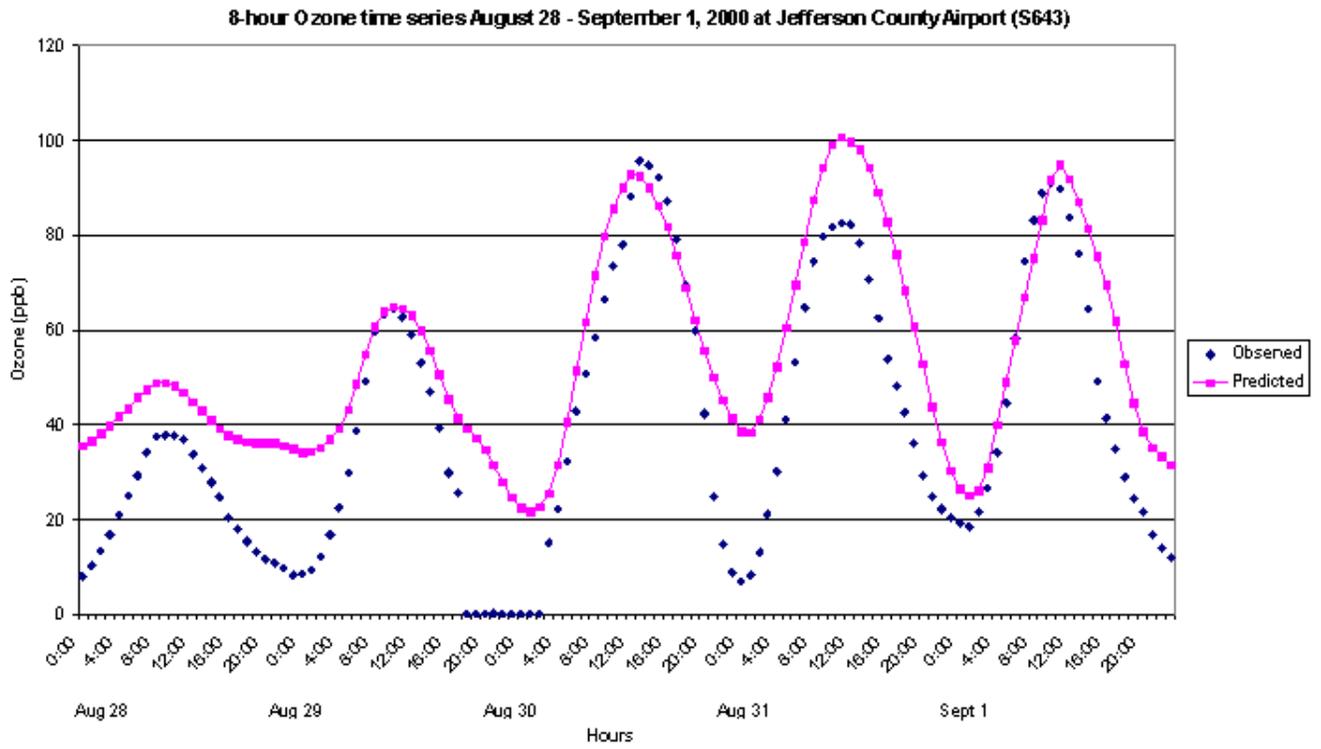


Figure K-33 8-hour Ozone Time Series August 28 - September 1, 2000 at S643

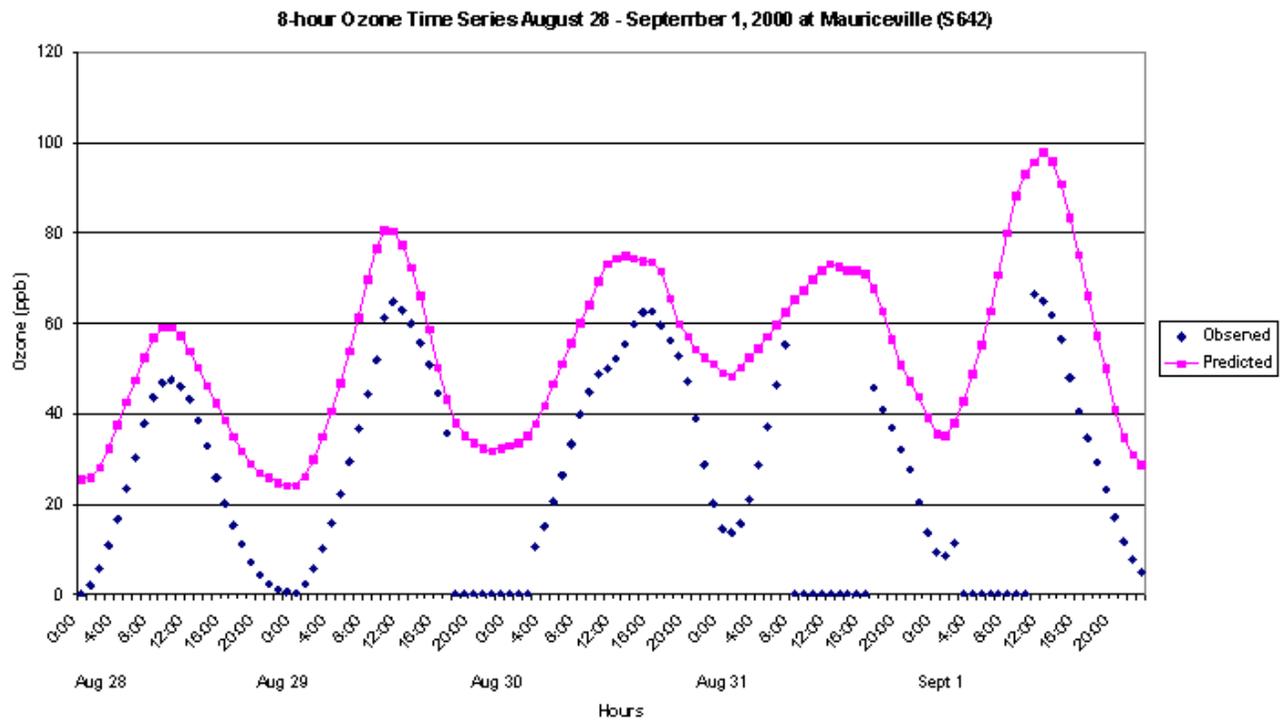


Figure K-34 8-hour Ozone Time Series August 28 - September 1, 2000 at S642

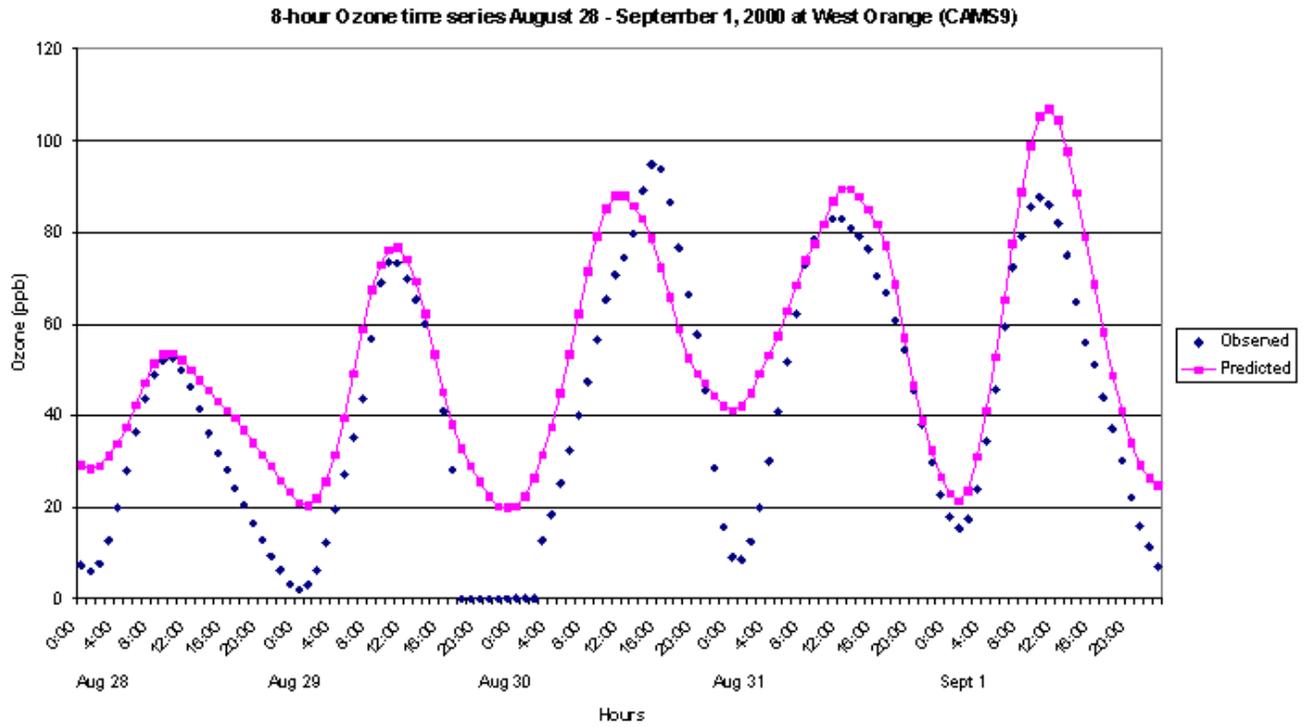


Figure K-35 8-hour Ozone Time Series August 28 - September 1, 2000 at CAM59

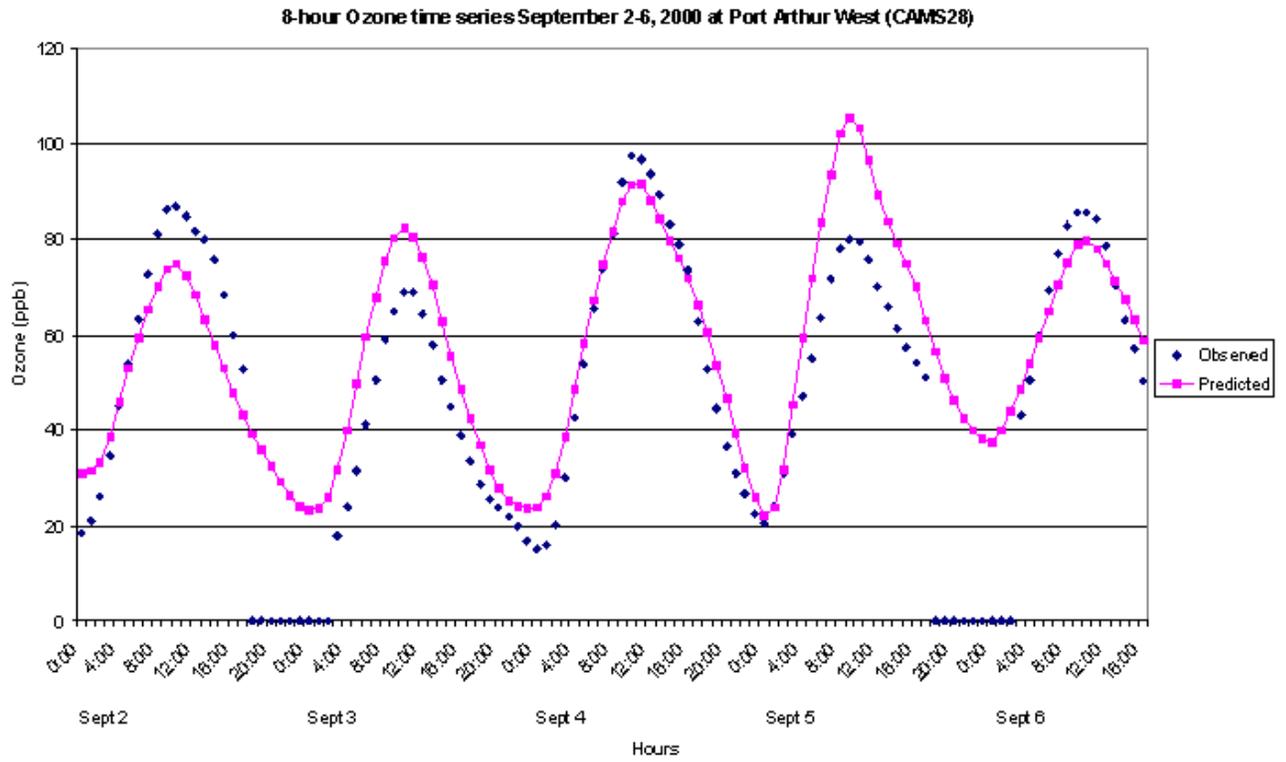


Figure K-36 8-hour Ozone Time Series September 2-6, 2000 at CAMS28

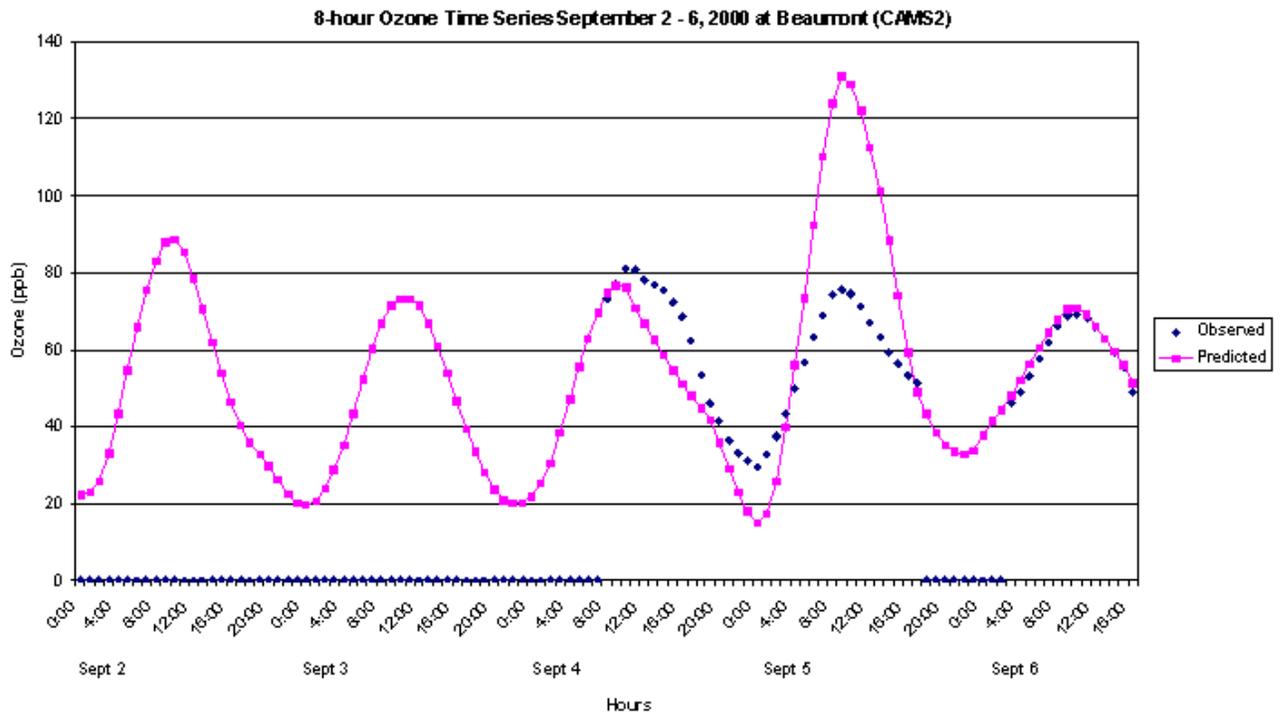


Figure K-37 8-hour Ozone Time Series September 2-6, 2000 at CAMS2

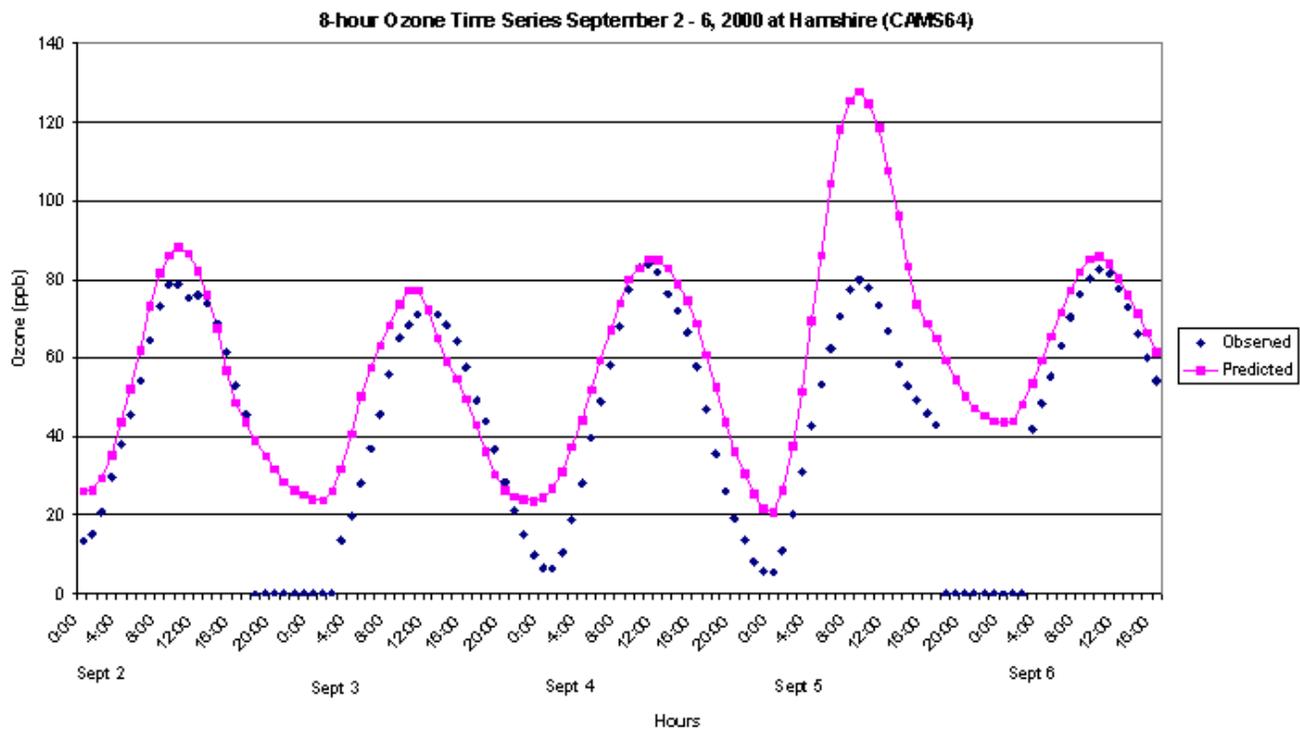


Figure K-38 8-hour Ozone Time Series September 2-6, 2000 at CAMS64

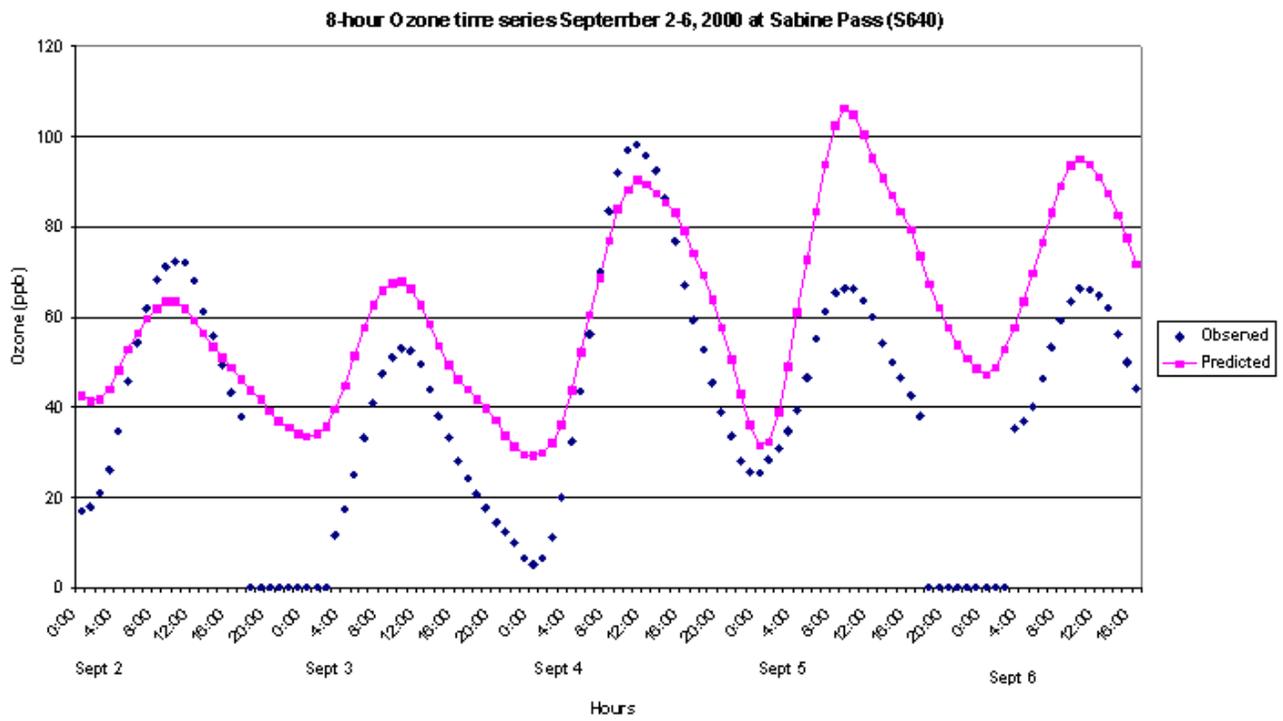


Figure K-39 8-hour Ozone Time Series September 2-6, 2000 at S640

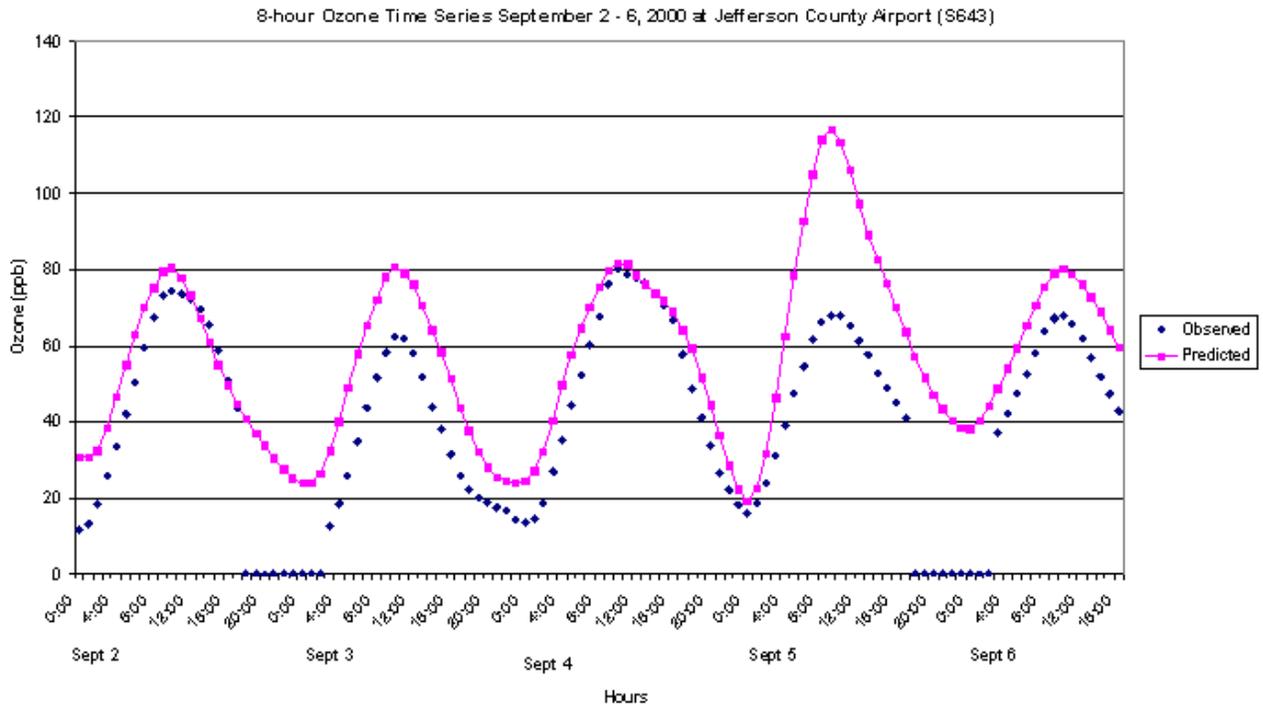


Figure K-40 8-hour Ozone Time Series September 2-6, 2000 at S643

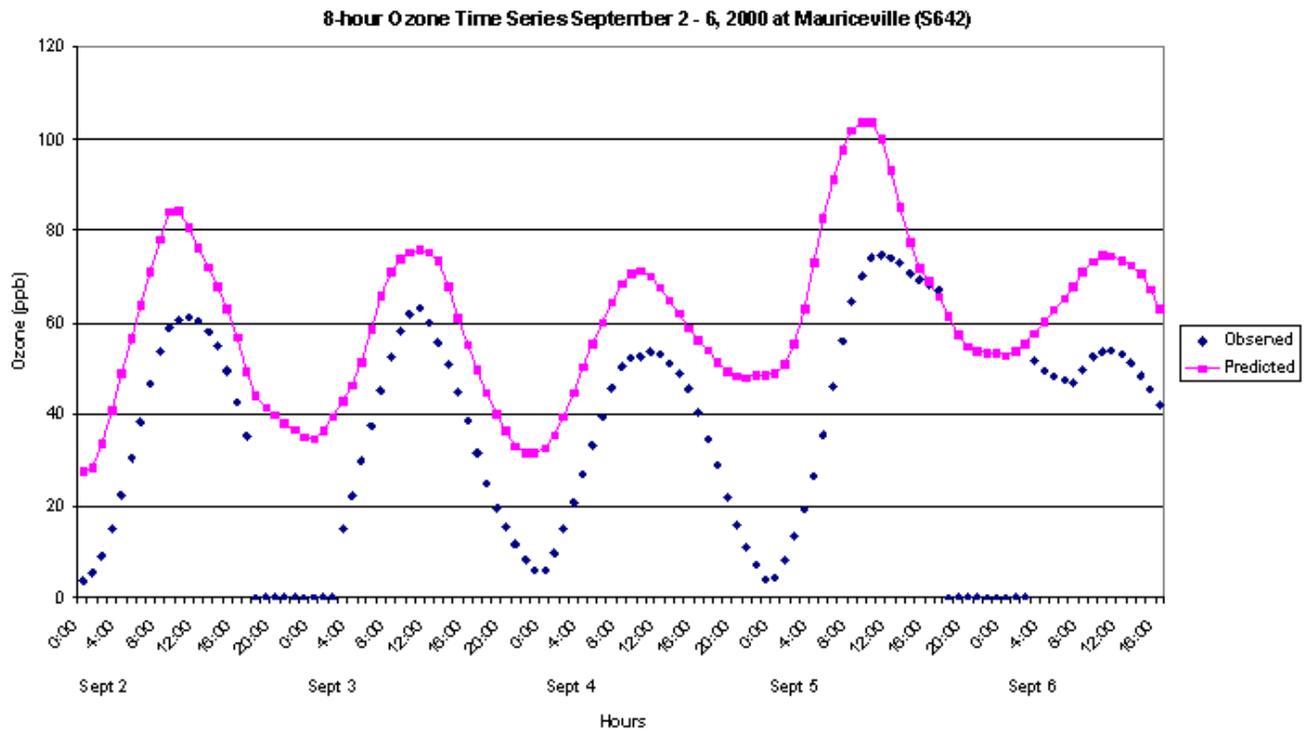


Figure K-41 8-hour Ozone Time Series September 2-6, 2000 at S642

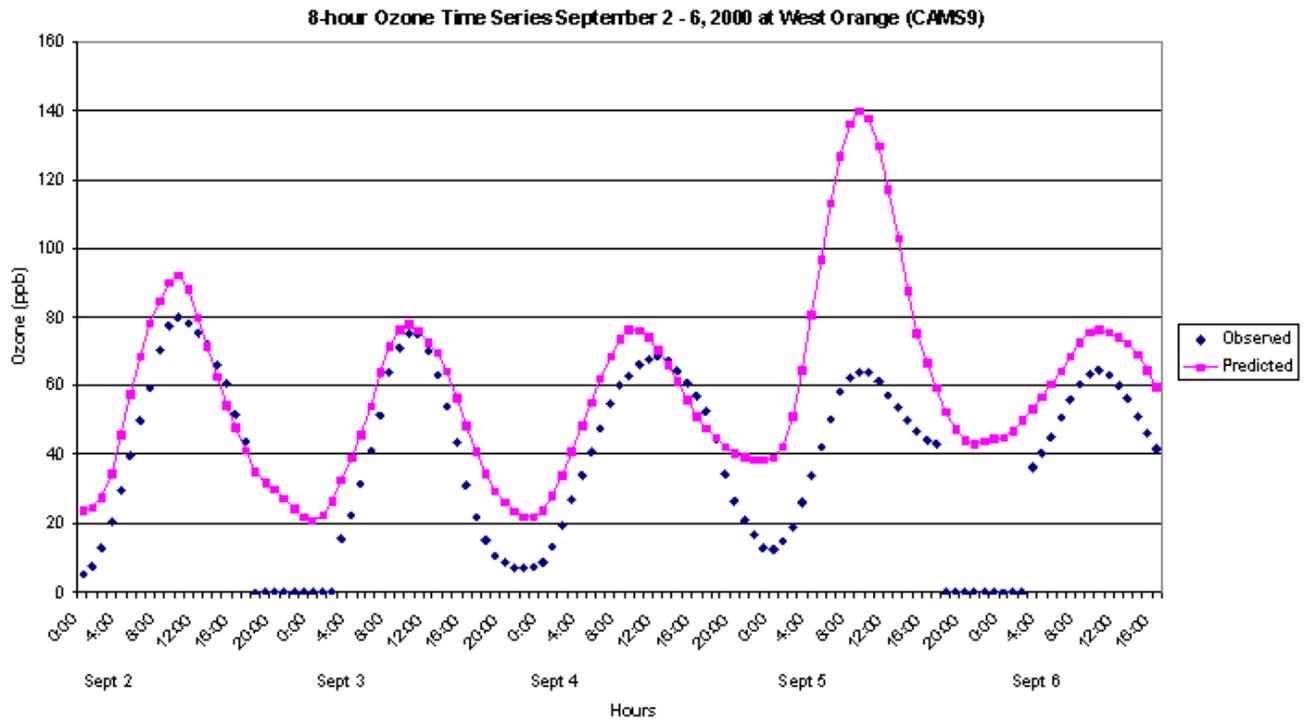


Figure K-42 8-hour Ozone Time Series September 2-6, 2000 at CAM59

III. Scatter plots for all stations and episode days, both 1-hour and 8-hour

1-hour Ozone Scatter Plot August 10-13, 2000 at Port Arthur West (CAMS28)

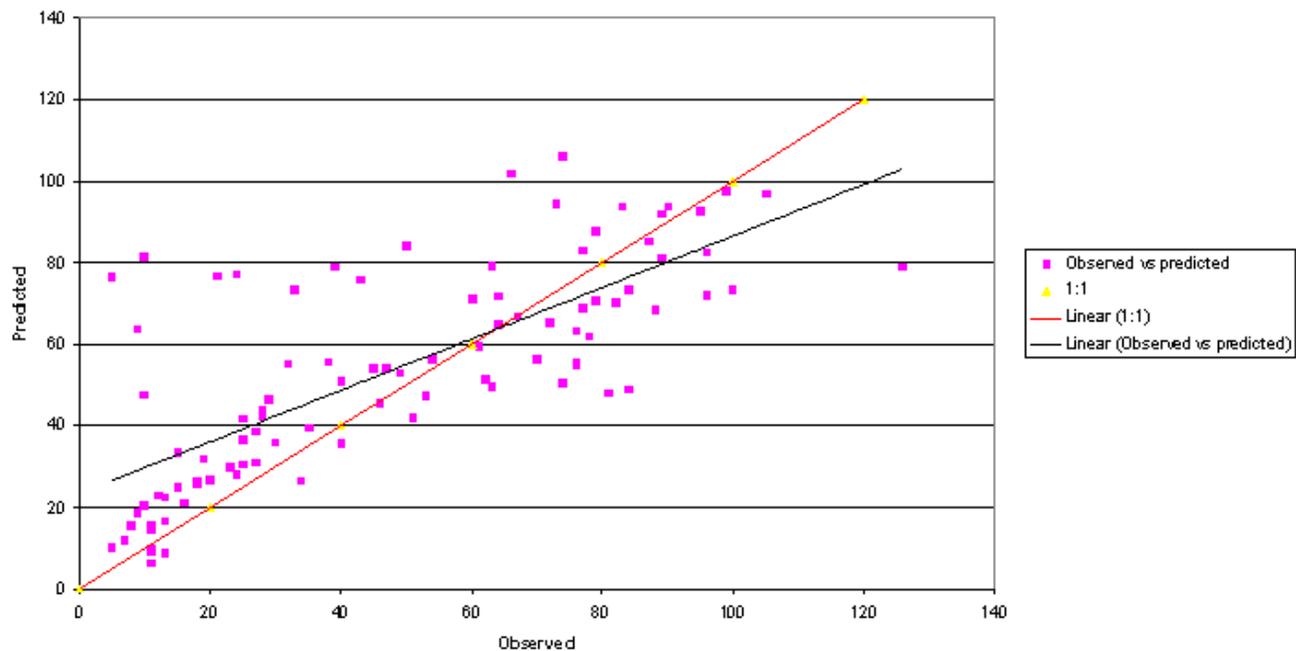


Figure K-43 1-hour Ozone Scatter Plot August 10-13, 2000 at CAMS28

1-hour Ozone Scatter Plot August 10-13, 2000 at Beaumont (CAM52)

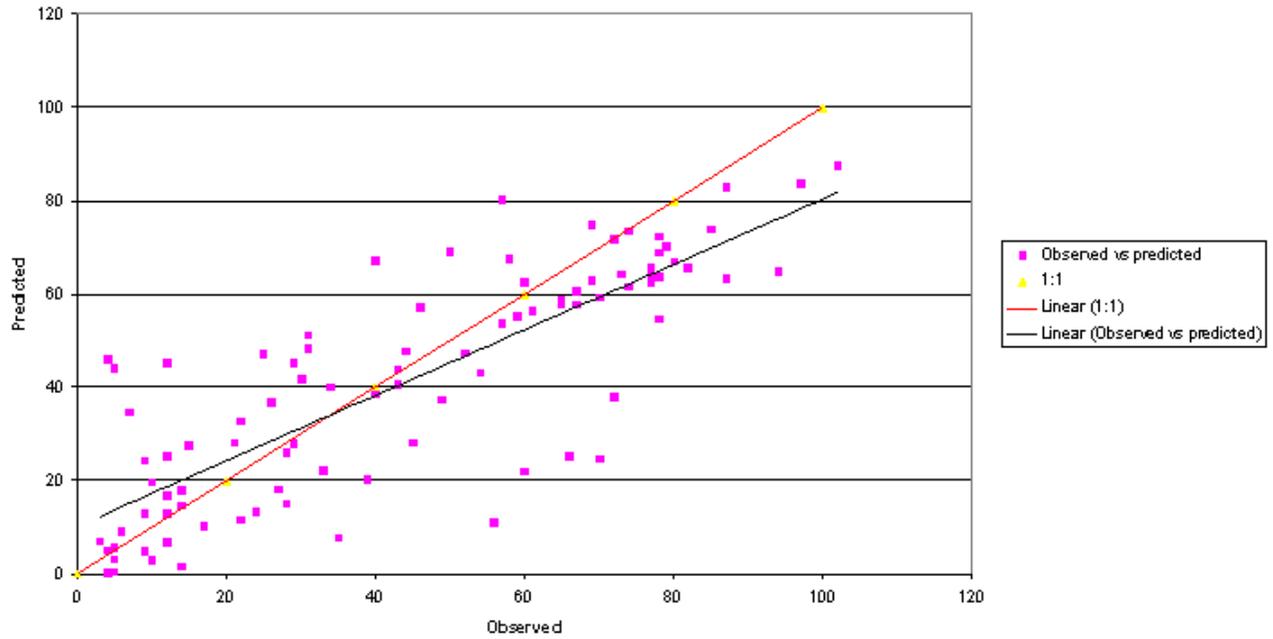


Figure K-44 1-hour Ozone Scatter Plot August 10-13, 2000 at CAMS2

1-hour Ozone Scatter Plot August 10-13, 2000 at Hamshire (CASM64)

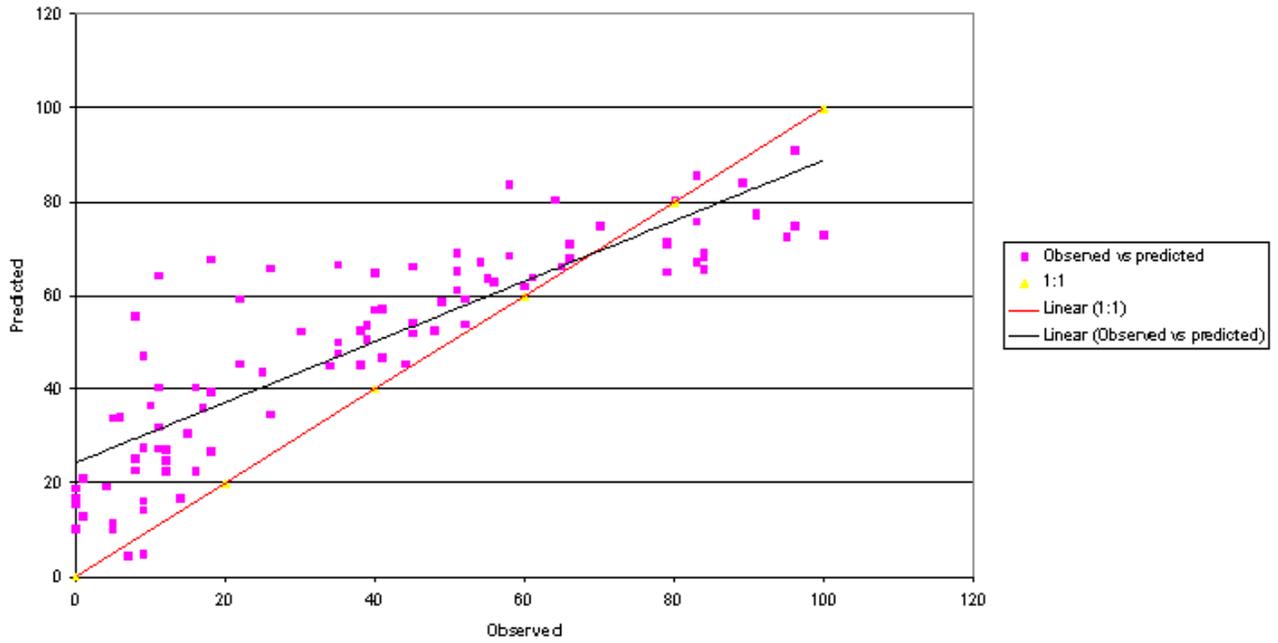


Figure K-45 1-hour Ozone Scatter Plot August 10-13, 2000 at CAMS64

1-hour Ozone Scatter Plot August 10-13, 2000 at Sabine Pass (S640)

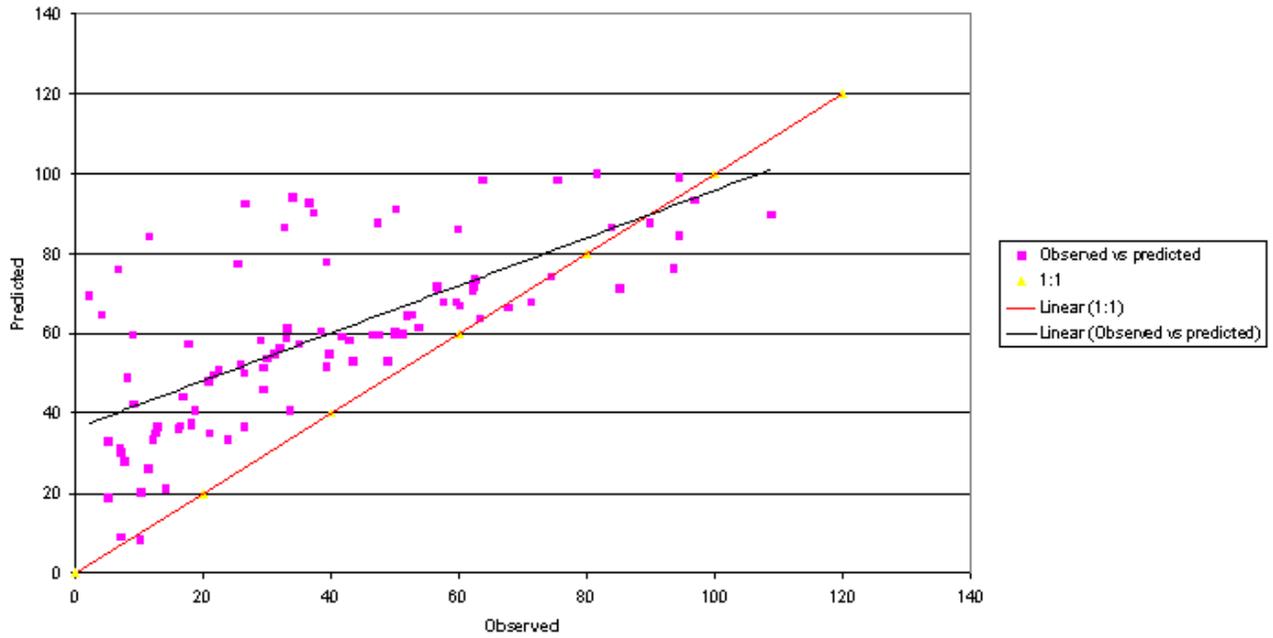


Figure K-46 1-hour Ozone Scatter Plot August 10-13, 2000 at S640

1-hour Ozone Scatter Plot August 10-13, 2000 at Jefferson County Airport (S643)

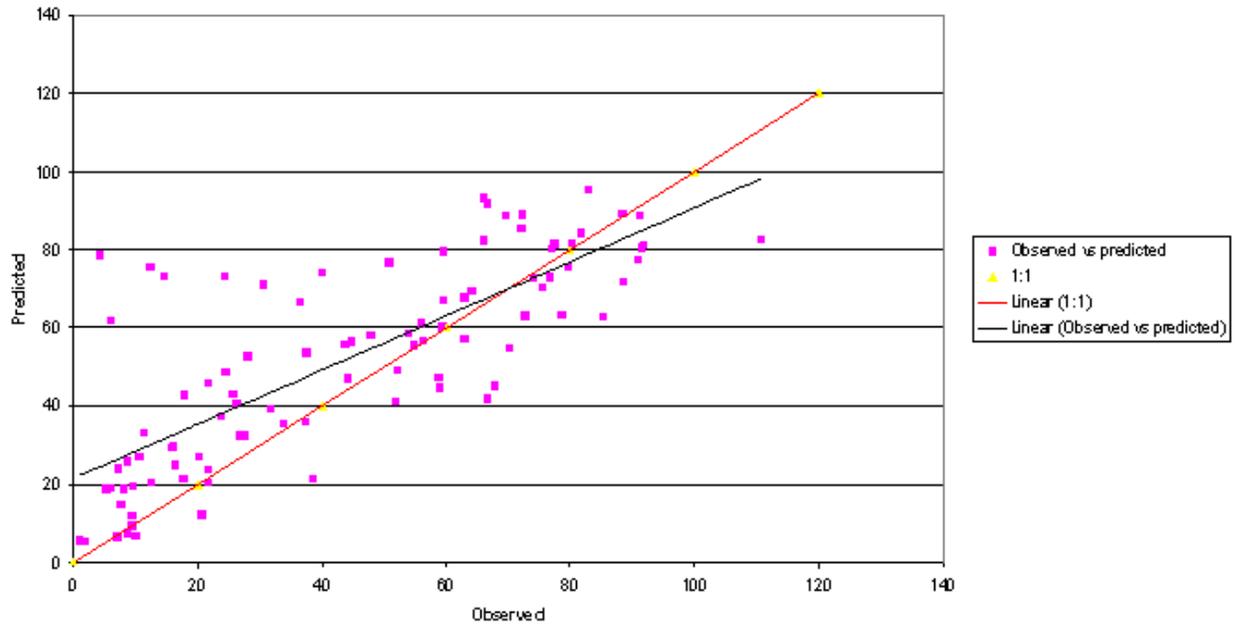


Figure K-47 1-hour Ozone Scatter Plot August 10-13, 2000 at S643

1-hour Ozone Scatter Plot August 10-13, 2000 at Mauriceville (S642)

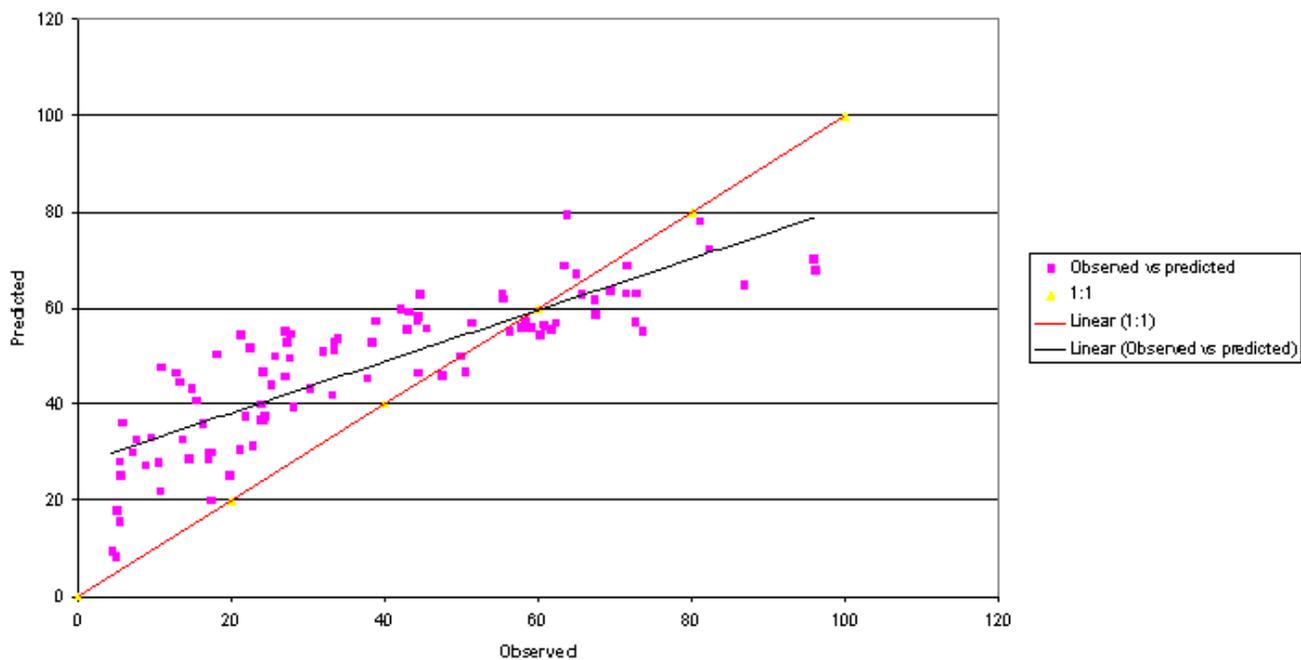


Figure K-48 1-hour Ozone Scatter Plot August 10-13, 2000 at S642

1-hour Ozone Scatter Plot August 10-13, 2000 at West Orange

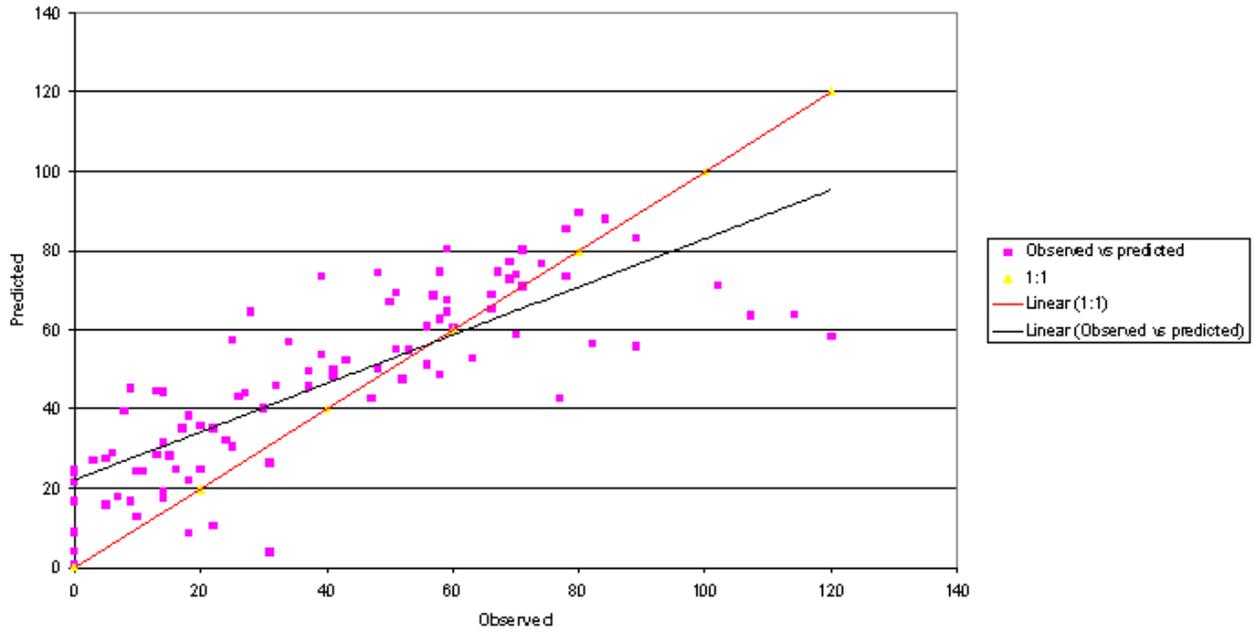


Figure K-49 1-hour Ozone Scatter Plot August 10-13, 2000 at CAMS9

8-hour Ozone Scatter Plot August 10-13, 2000 at Port Arthur West (CAMS28)

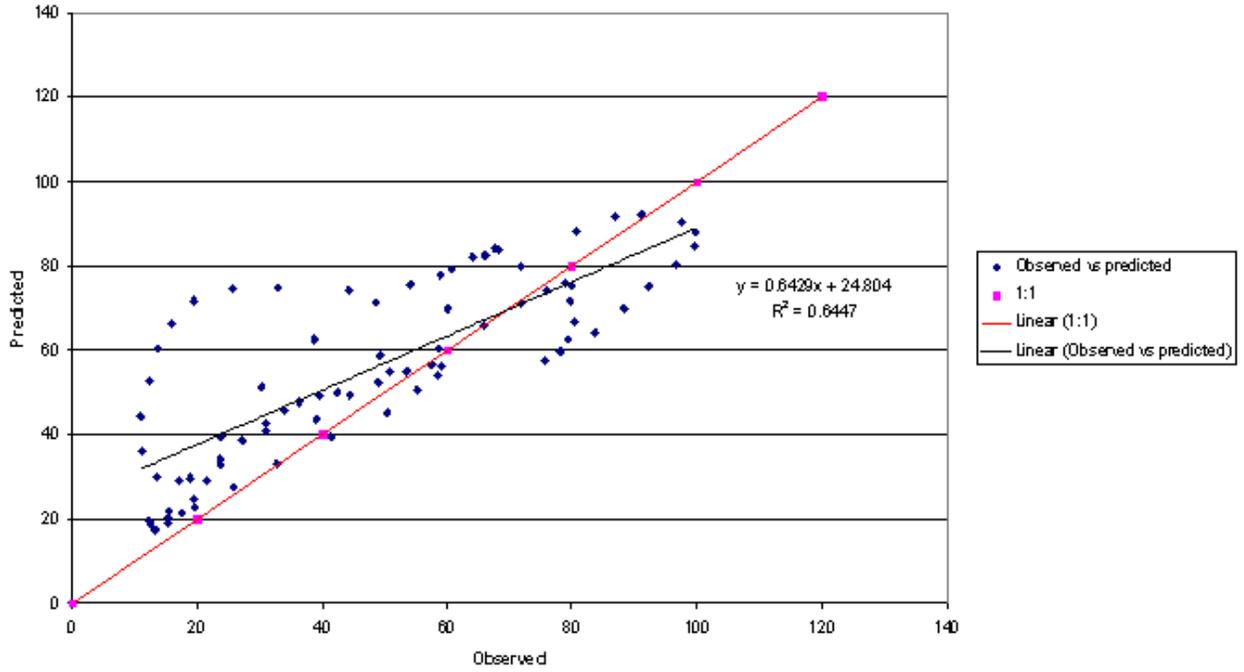


Figure K-50 8-hour Ozone Scatter Plot August 10-13, 2000 at CAMS28

8-hour Ozone Scatter Plot August 10-13, 2000 at Beaumont (CAMS2)

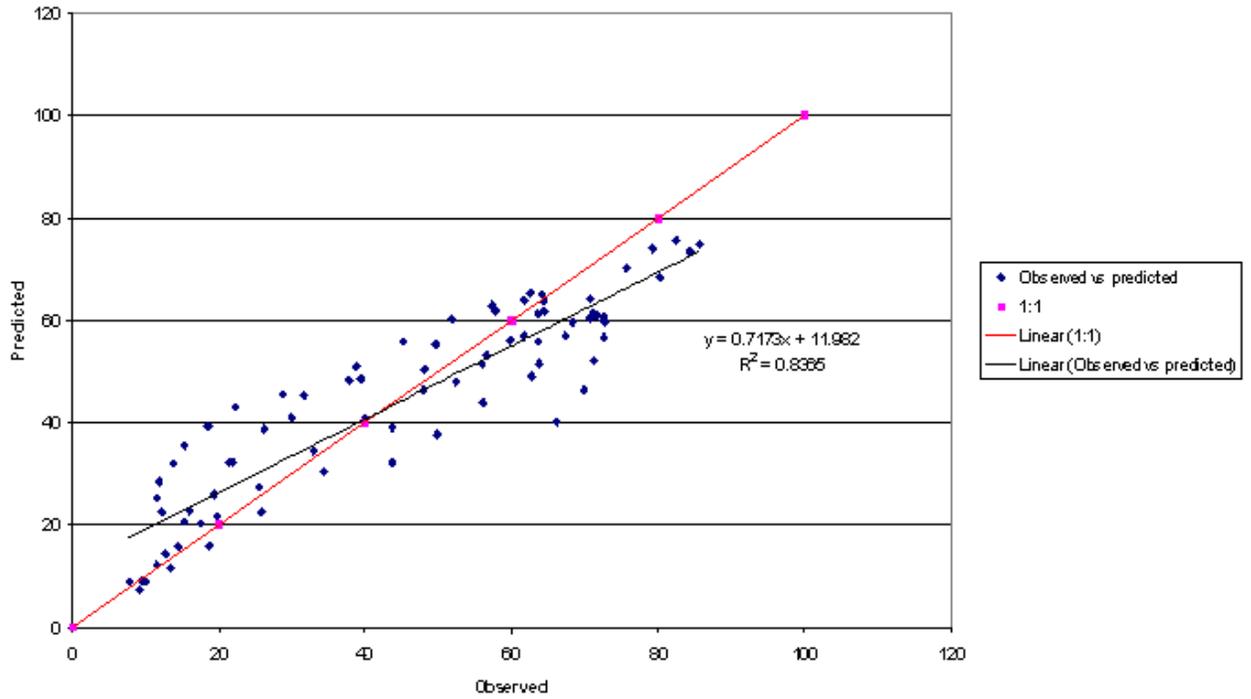


Figure K-51 8-hour Ozone Scatter Plot August 10-13, 2000 at CAMS2

8-hour Ozone Scatter Plot August 10-13, 2000 at Hamshire (CAM564)

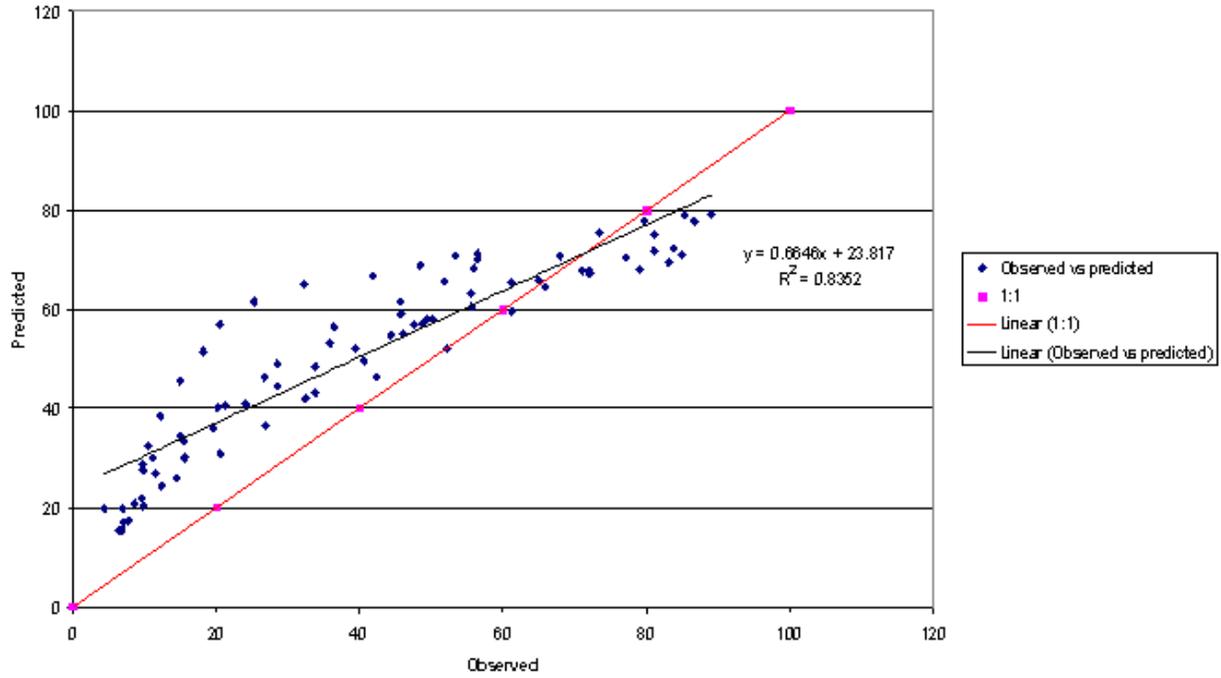


Figure K-52 8-hour Ozone Scatter Plot August 10-13, 2000 at CAMS64

8-hour Ozone Scatter Plot August 10-13, 2000 at Sabine Pass (S640)

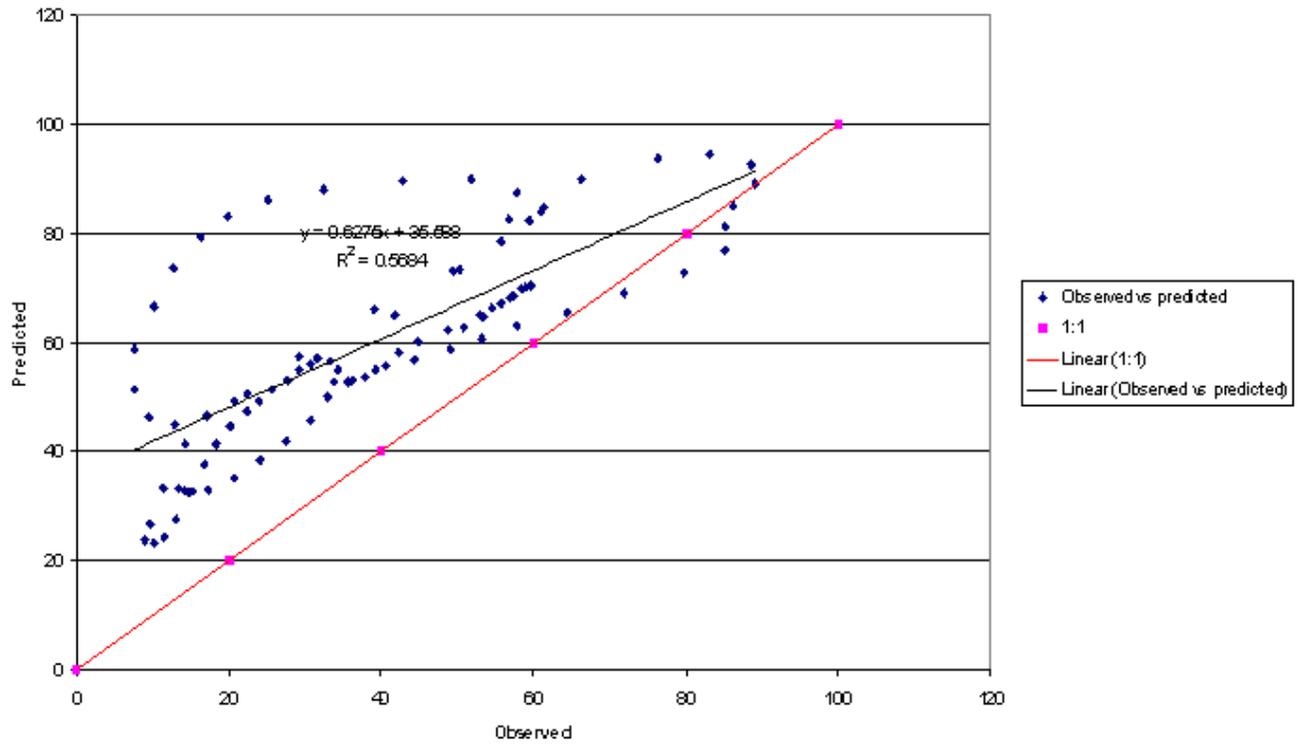


Figure K-53 8-hour Ozone Scatter Plot August 10-13, 2000 at S640

8-hour Ozone Scatter Plot August 10-13, 2000 at Jefferson County Airport (S643)

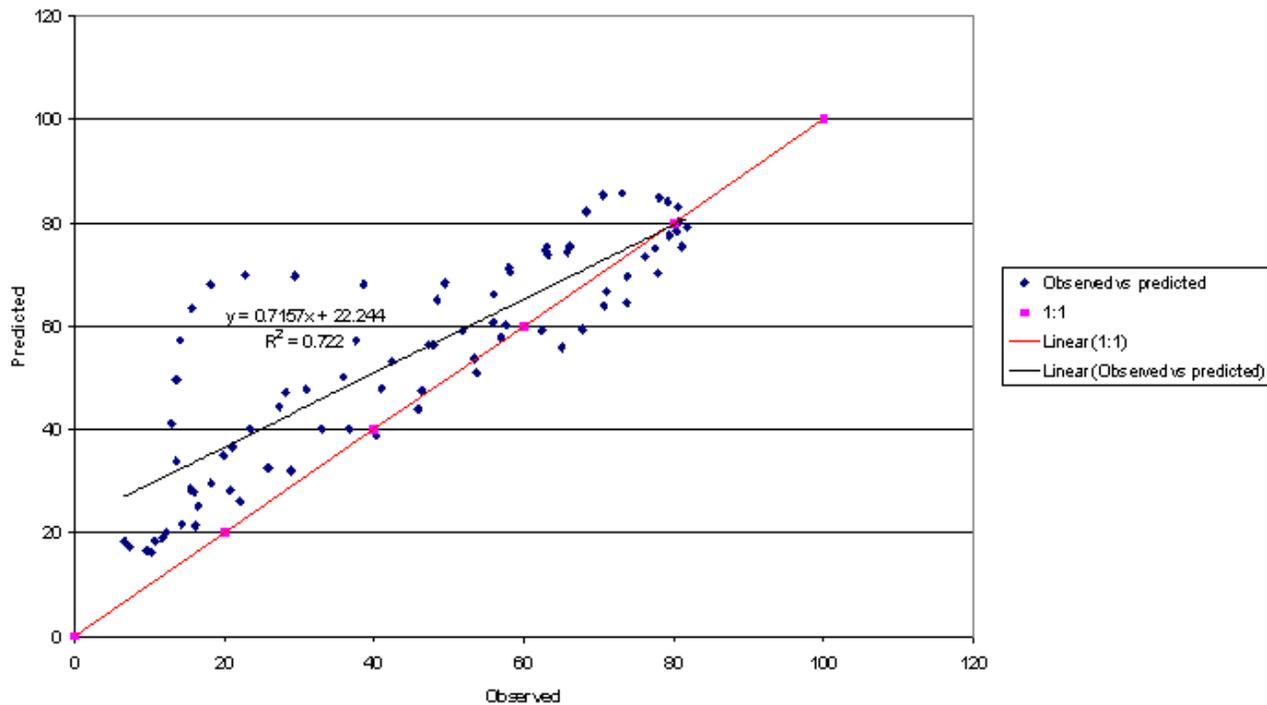


Figure K-54 8-hour Ozone Scatter Plot August 10-13, 2000 at S643

8-hour Ozone Scatter Plot August 10-13, 2000 at Mauriceville (S642)

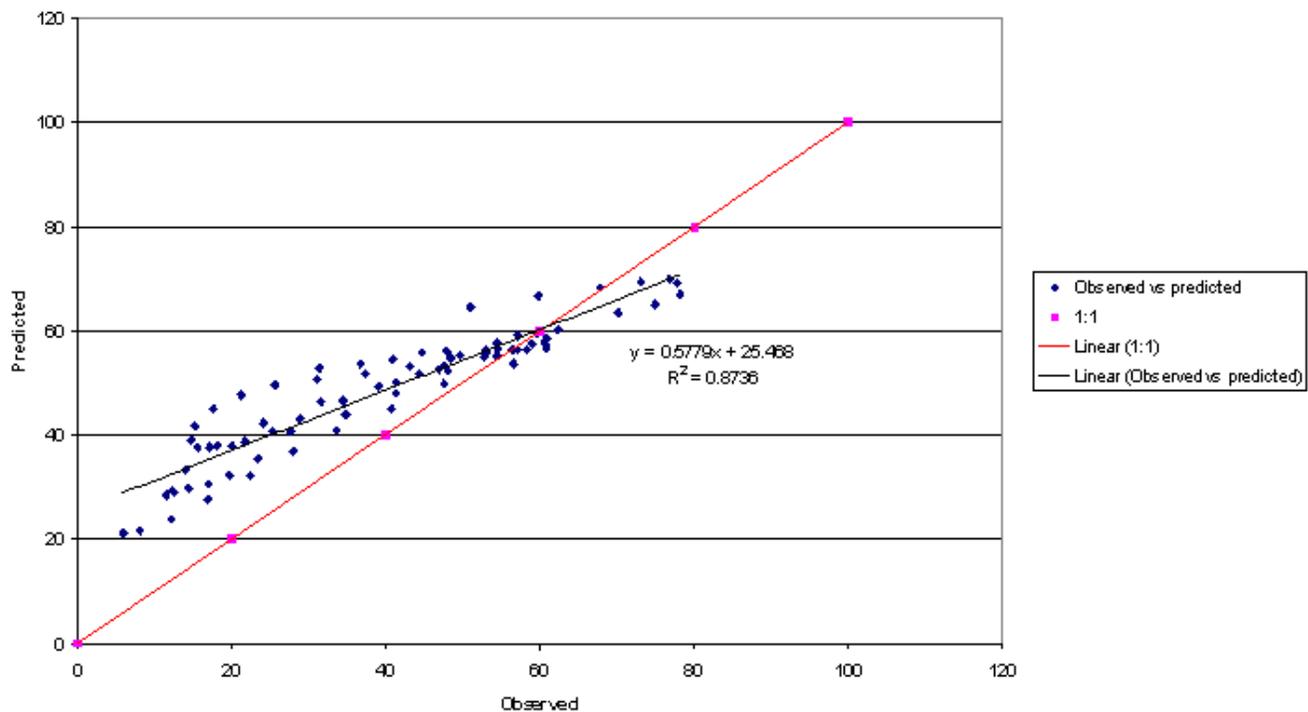


Figure K-55 8-hour Ozone Scatter Plot August 10-13, 2000 at S642

8-hour Ozone Scatter Plot August 10-13, 2000 at West Orange (CAM59)

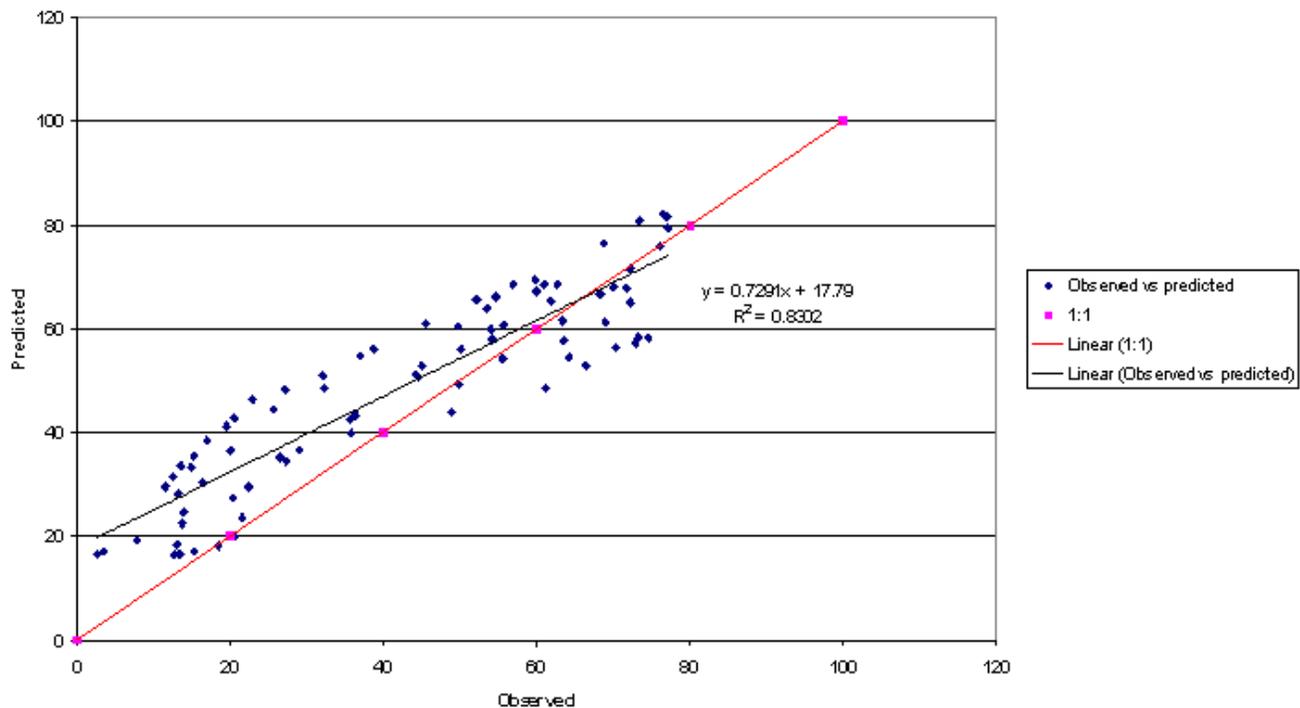


Figure K-56 8-hour Ozone Scatter Plot August 10-13, 2000 at CAM59

1-hour Ozone Scatter Plot August 28 - September 6, 2000 at Port Arthur West (CAMS28)

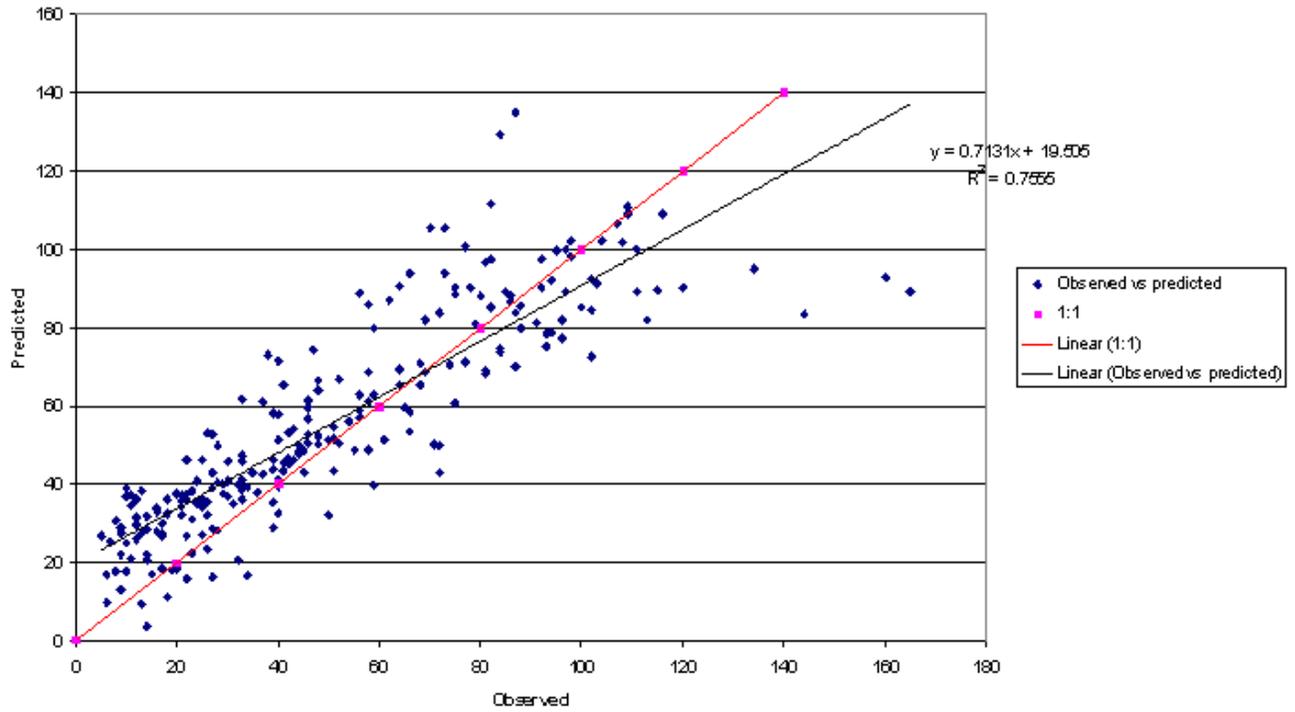


Figure K-57 1-hour Ozone Scatter Plot August 28-September 6, 2000 at CAMS28

1-hour Ozone Scatter Plot August 28 - September 6, 2000 at Beaumont (CAMS2)

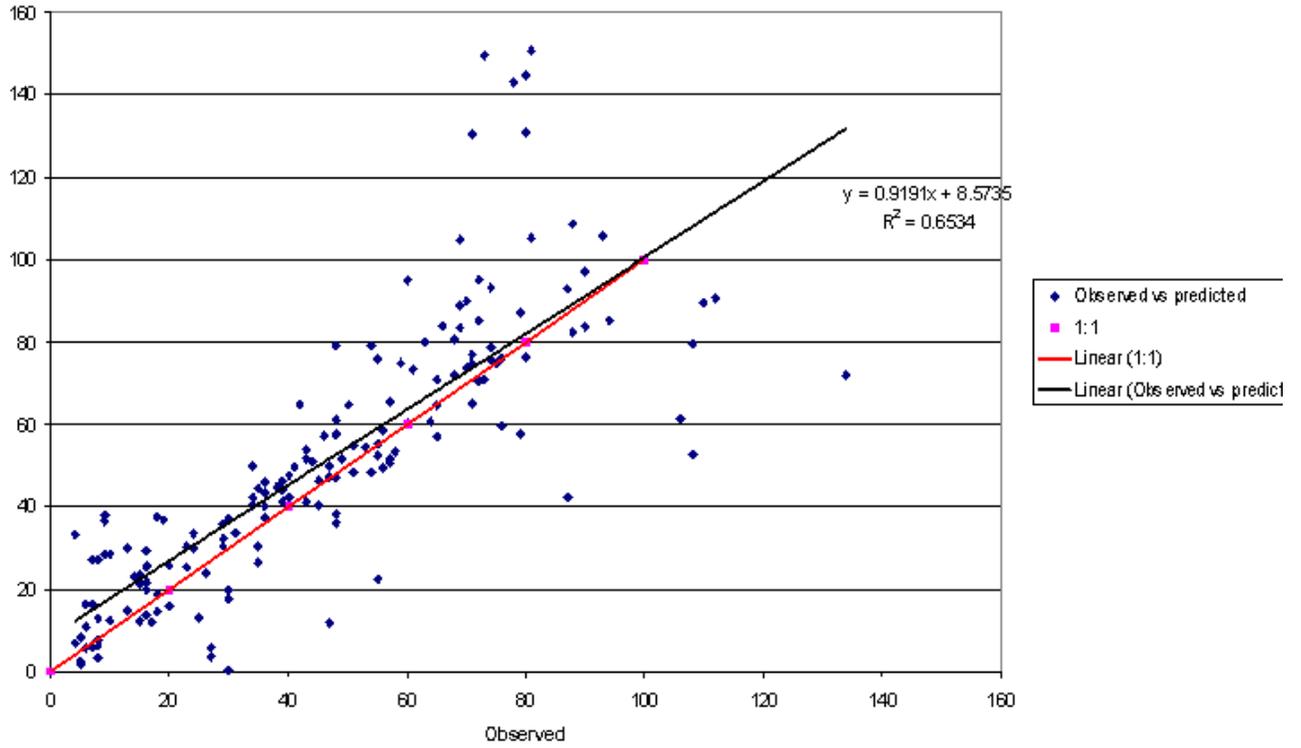


Figure K-58 1-hour Ozone Scatter Plot August 28-September 6, 2000 at CAMS2

1-hour Ozone Scatter Plot August 28 - September 6, 2000 at Hampshire (CAM564)

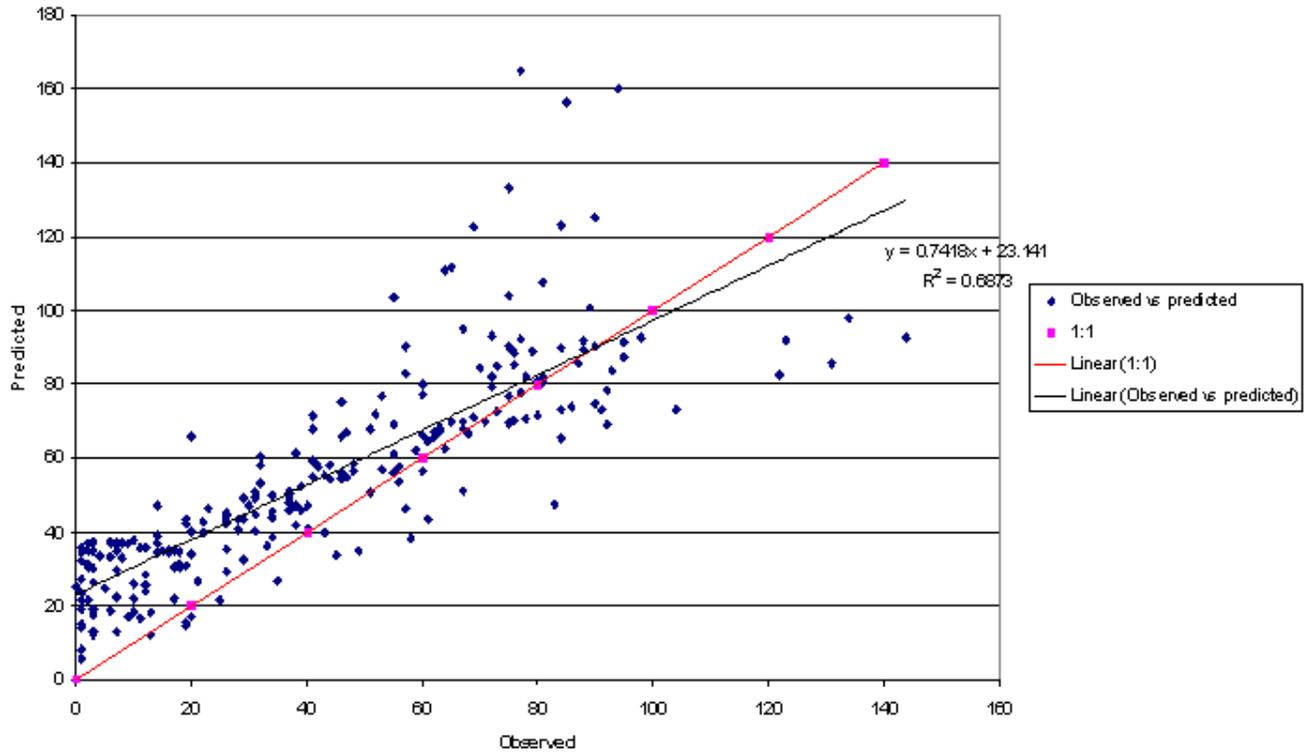


Figure K-59 1-hour Ozone Scatter Plot August 28-September 6, 2000 at CAM564

1-hour Ozone Scatter Plot August 28 - September 6, 2000 at Sabine Pass (S640)

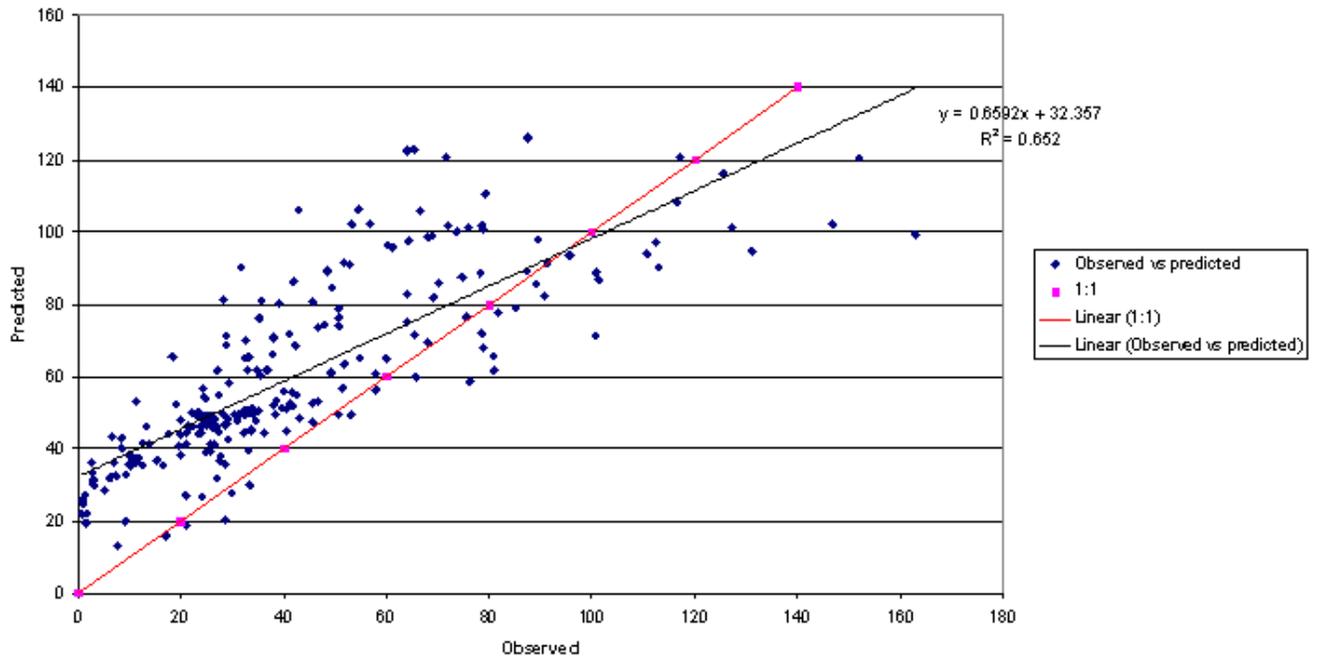


Figure K-60 1-hour Ozone Scatter Plot August 28-September 6, 2000 at S640

1-hour Ozone Scatter Plot August 28 - September 6, 2000 at Jefferson County Airport (S643)

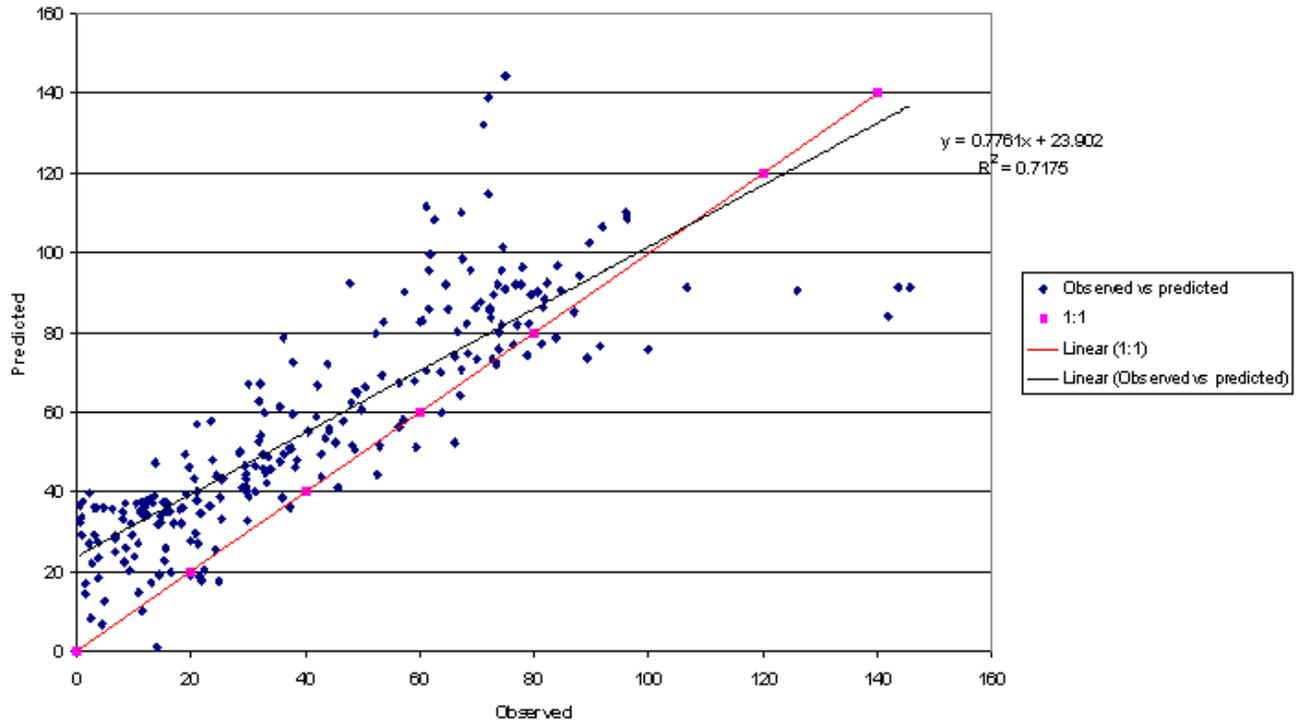


Figure K-61 1-hour Ozone Scatter Plot August 28-September 6, 2000 at S643

1-hour Ozone Scatter Plot August 28, 2000 - September 6, 2000 at Mauriceville (S642)

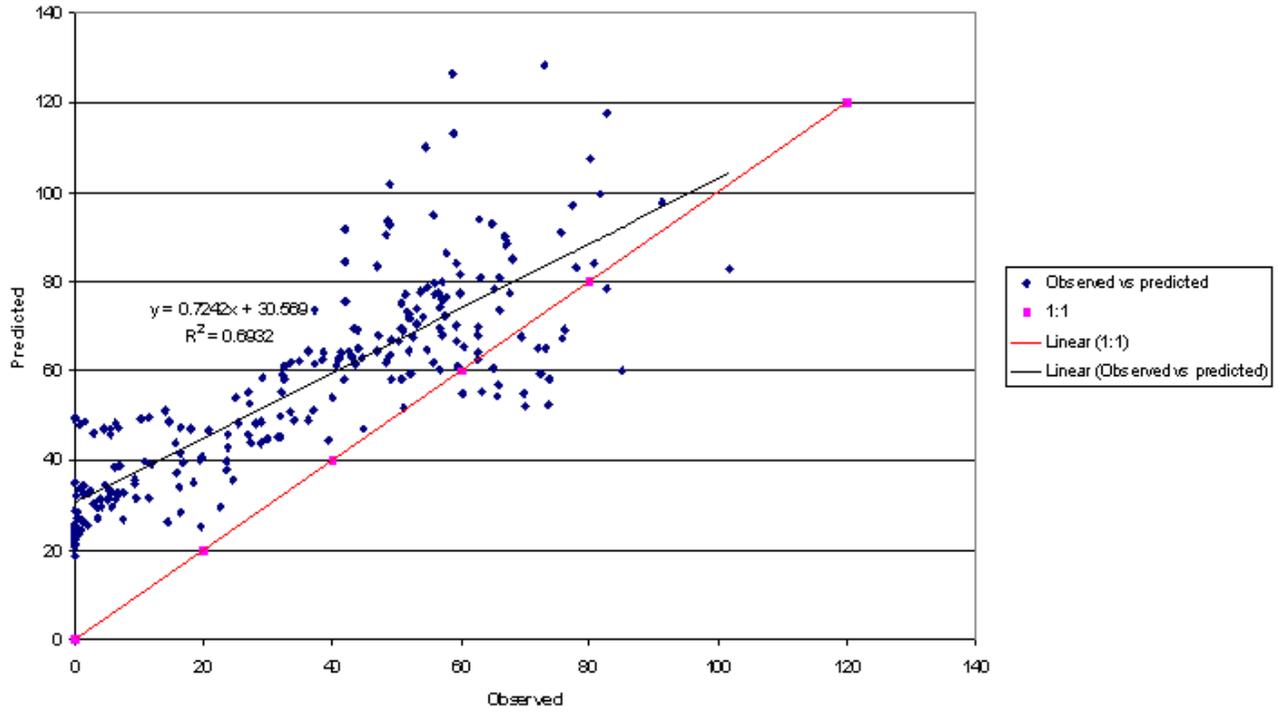


Figure K-62 1-hour Ozone Scatter Plot August 28-September 6, 2000 at S642

1-hour Ozone Scatter Plot August 28 - September 6, 2000 at West Orange (CAM9)

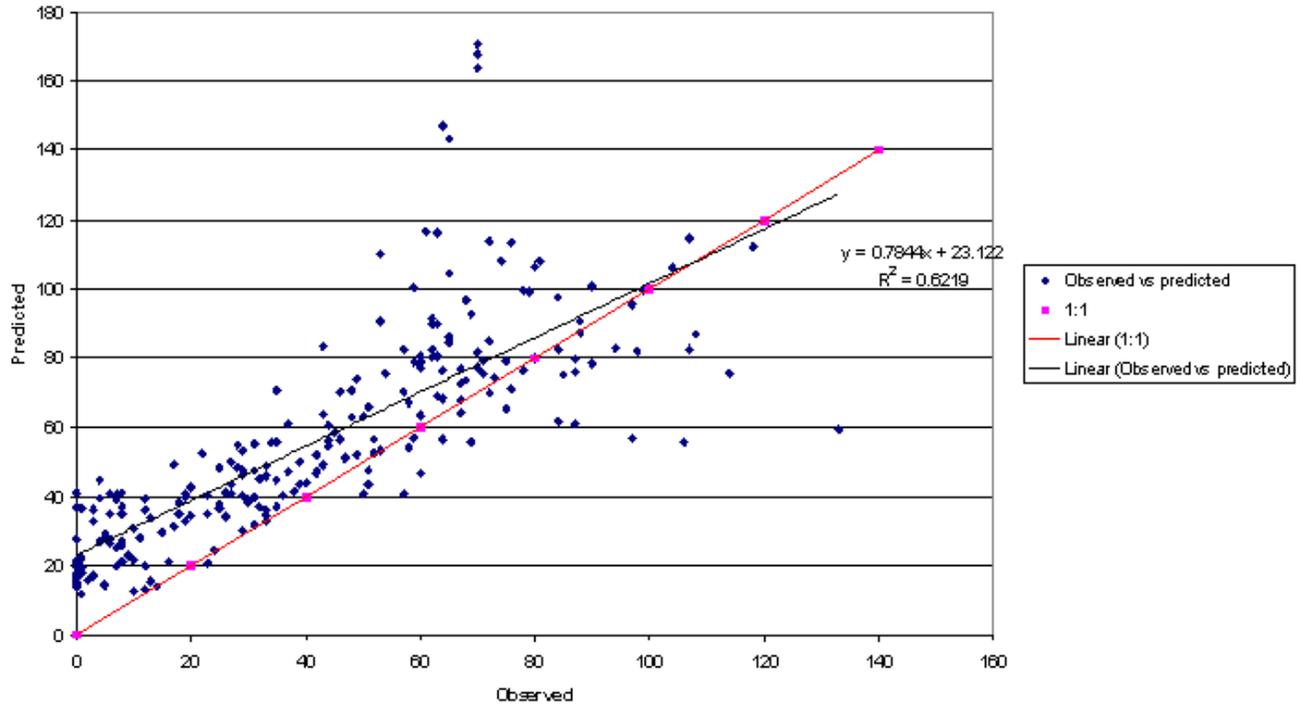


Figure K-63 1-hour Ozone Scatter Plot August 28-September 6, 2000 at CAM9

8-hour Ozone Scatter Plot August 28 - September 6, 2000 at Port Arthur West (CAMS28)

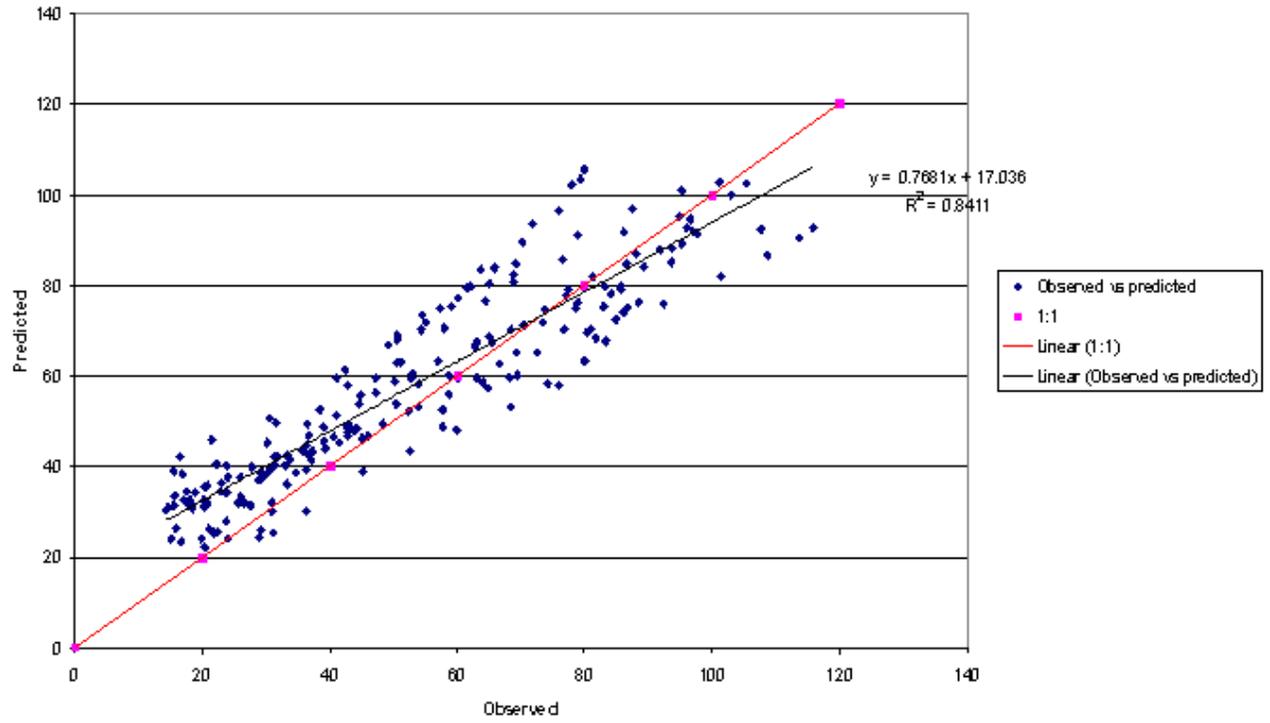


Figure K-64 8-hour Ozone Scatter Plot August 28-September 6, 2000 at CAMS28

8-hour Ozone Scatter Plot August 28 - September 6, 2000 at Beaumont (CAM52)

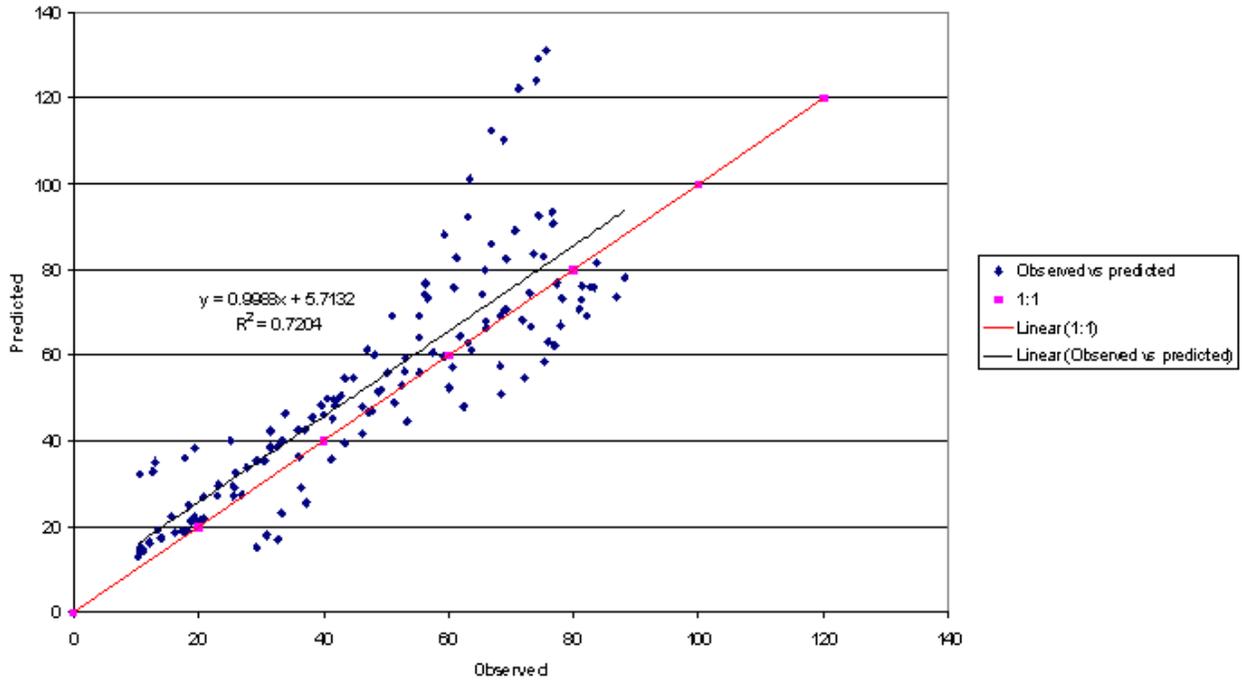


Figure K-65 8-hour Ozone Scatter Plot August 28-September 6, 2000 at CAMS2

8-hour Ozone Scatter Plot August 28 - September 6, 2000 at Hampshire (CAM564)

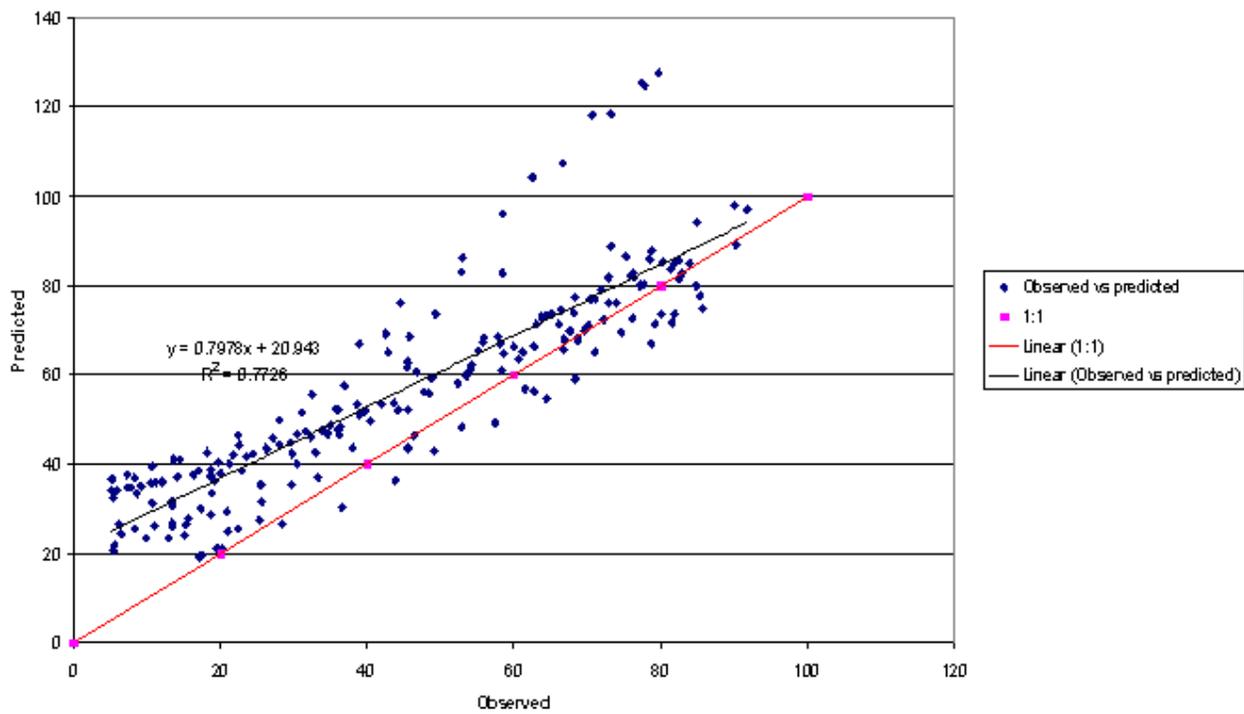


Figure K-66 8-hour Ozone Scatter Plot August 28-September 6, 2000 at CAMS64

8-hour Ozone Scatter Plot August 28 - September 6, 2000 at Sabine Pass (S640)

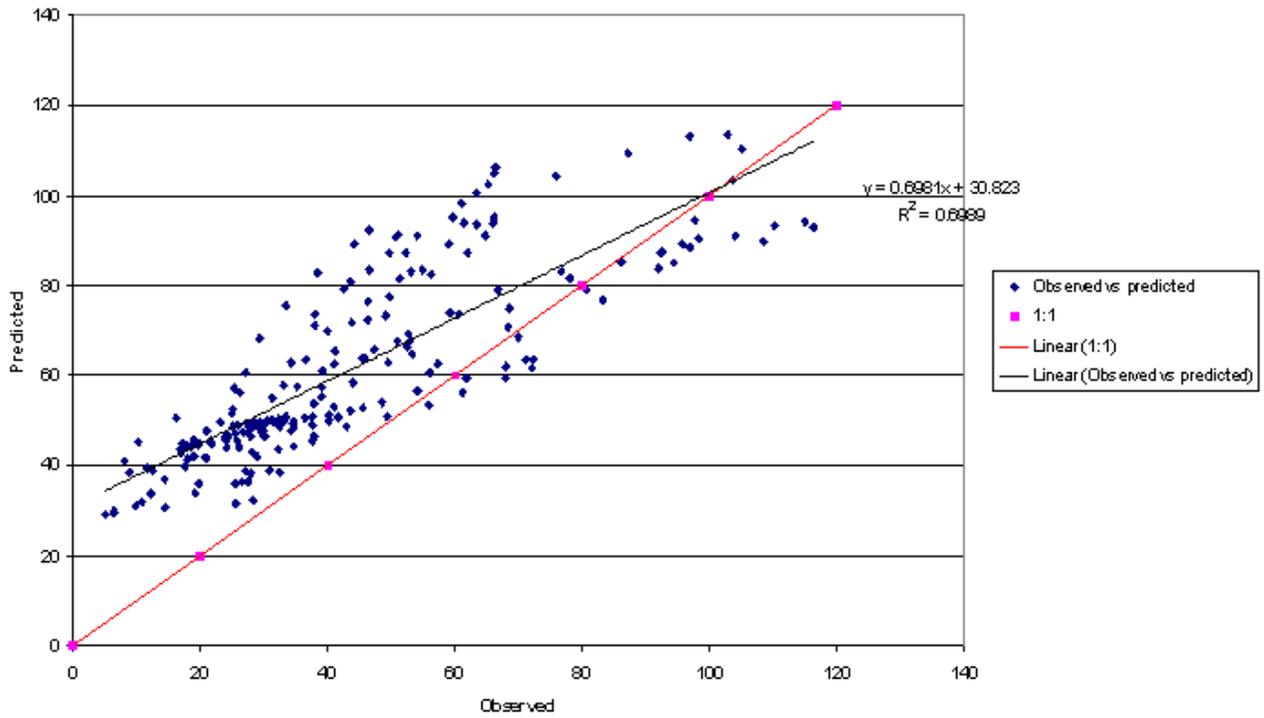


Figure K-67 8-hour Ozone Scatter Plot August 28-September 6, 2000 at S640

8-hour Ozone Scatter Plot August 28 - September 6, 2000 at Jefferson County Airport (S643)

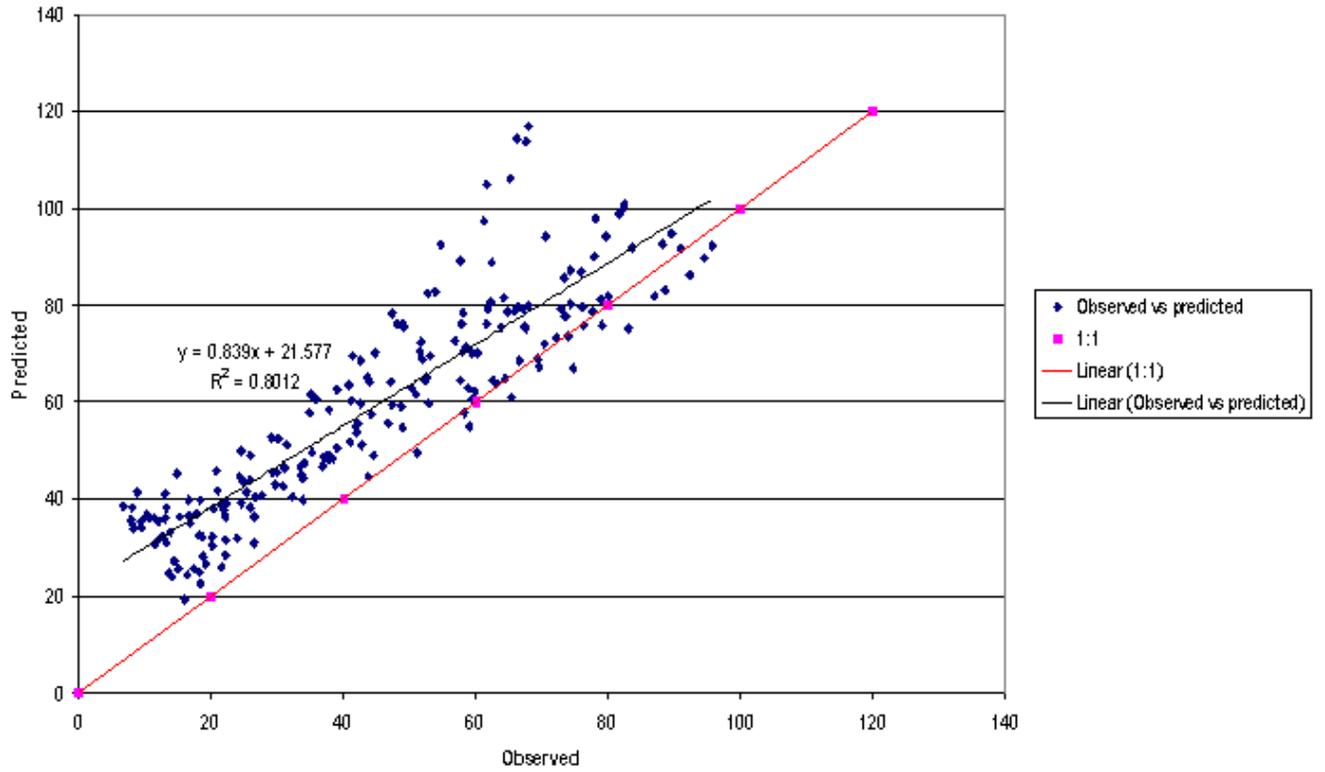


Figure K-68 8-hour Ozone Scatter Plot August 28-September 6, 2000 at S643

8-hour Scatter Plot August 28 - September 6, 2000 at Mauriceville (S642)

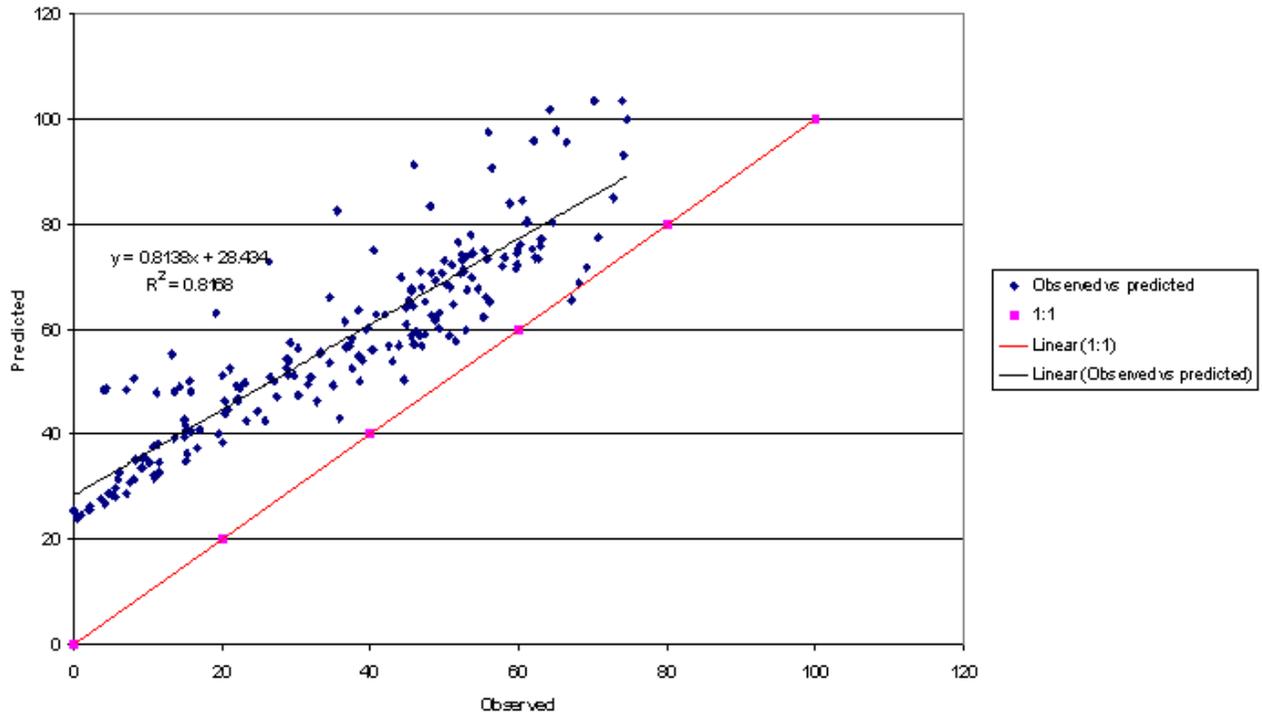


Figure K-69 8-hour Ozone Scatter Plot August 28-September 6, 2000 at S642

8-hour Ozone Scatter Plot August 28 - September 6, 2000 at West Orange (CAM59)

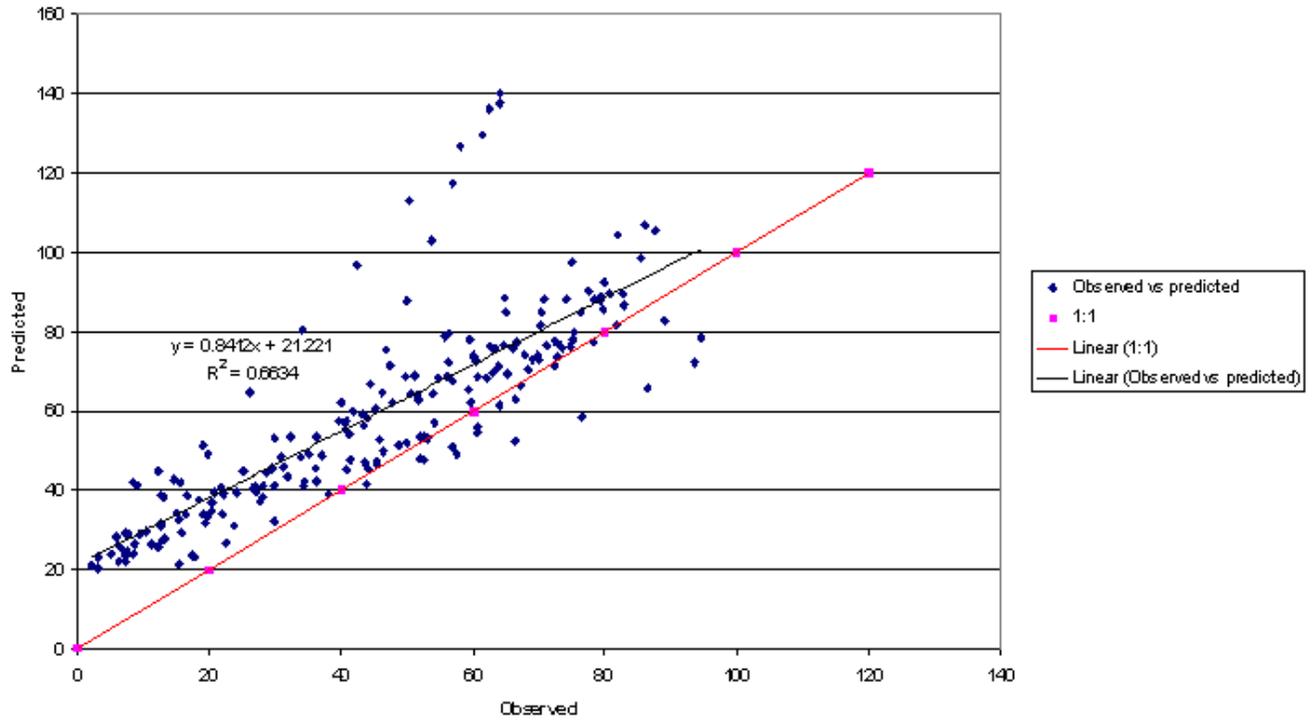


Figure K-70 8-hour Ozone Scatter Plot August 28-September 6, 2000 at CAMS9

IV. Isopleth plots for each day of both episodes, both 1-hour and 8-hour.

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 08/10/2000

HGMCR: camx403.base5b.pto2n2

Layer 1

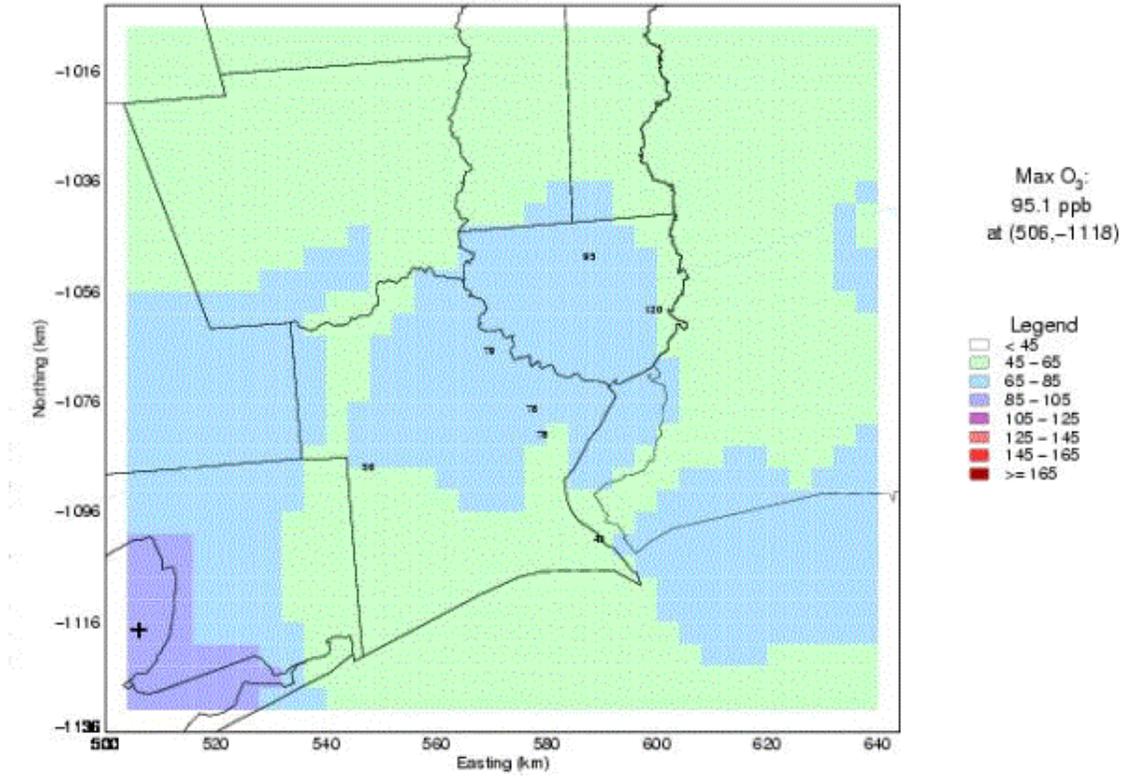


Figure K-71 1-hour Ozone Isopleth Plot August 10, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 08/11/2000

HGMCR: camx403.base5b.pto2n2

Layer 1

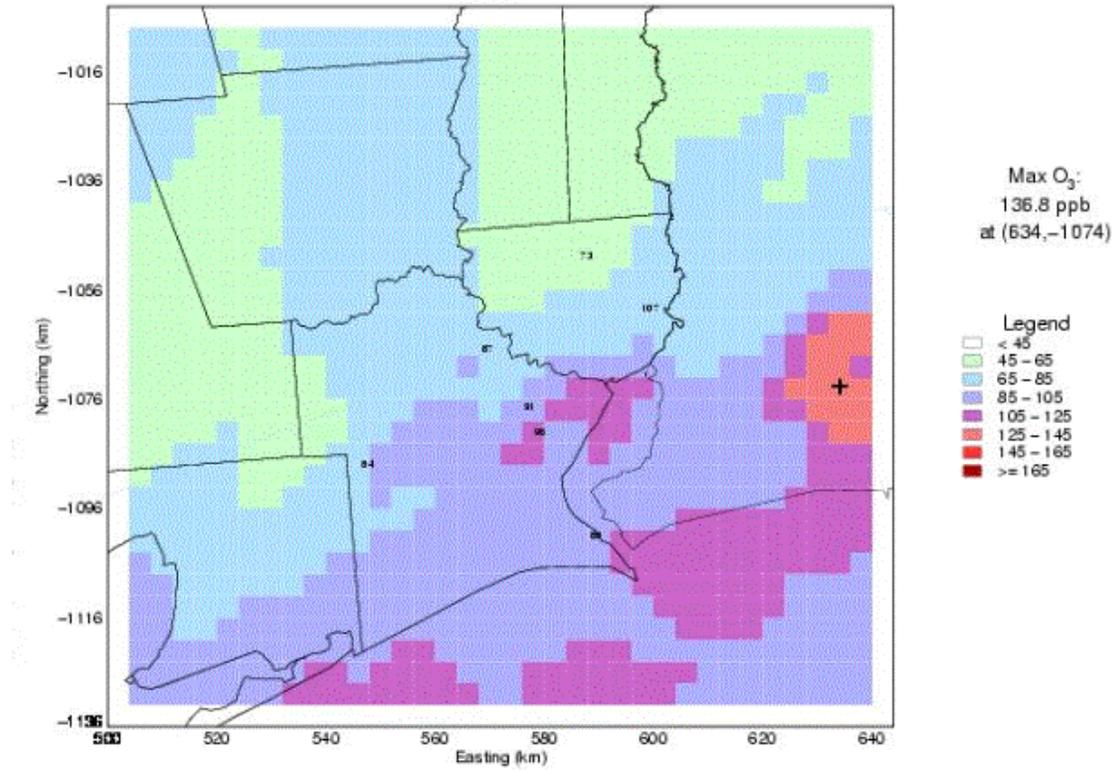


Figure K-72 1-hour Ozone Isopleth Plot August 11, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 08/13/2000

HGMCR: camx403.base5b.pto2n2

Layer 1

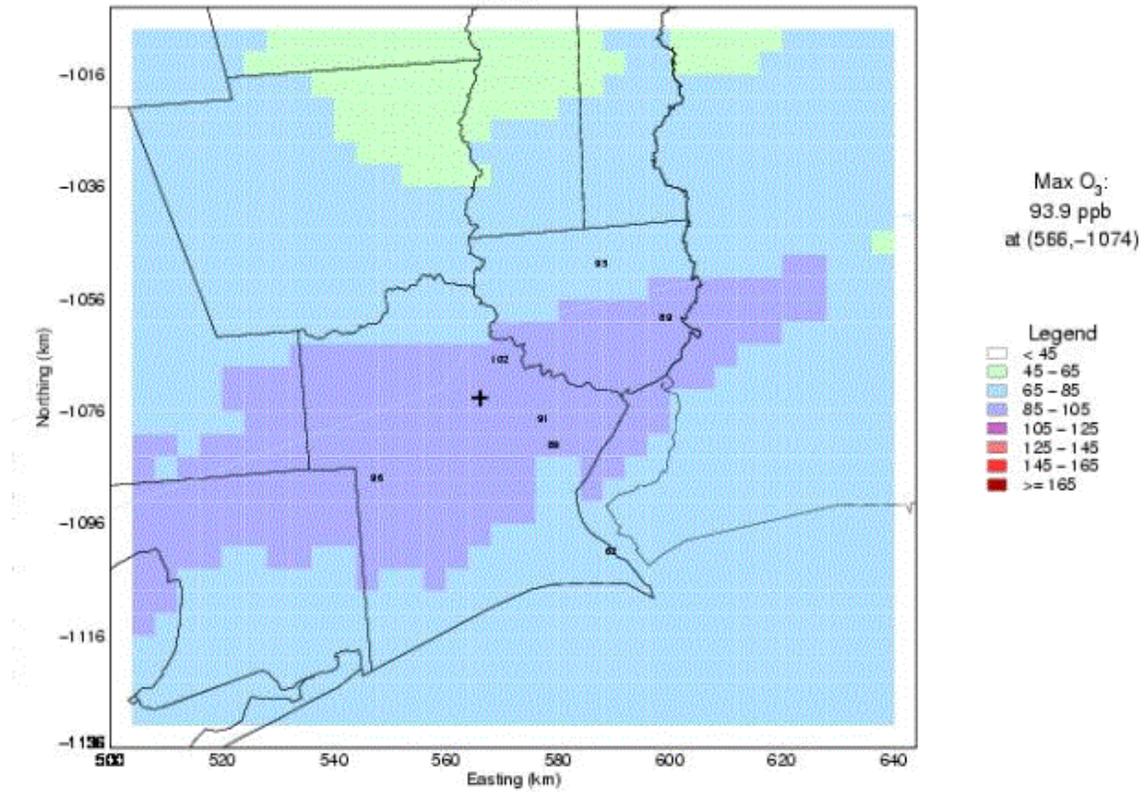


Figure K-74 1-hour Ozone Isopleth Plot August 13, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 08/28/2000
HGMCRC: camx403.base5b.psite2n2

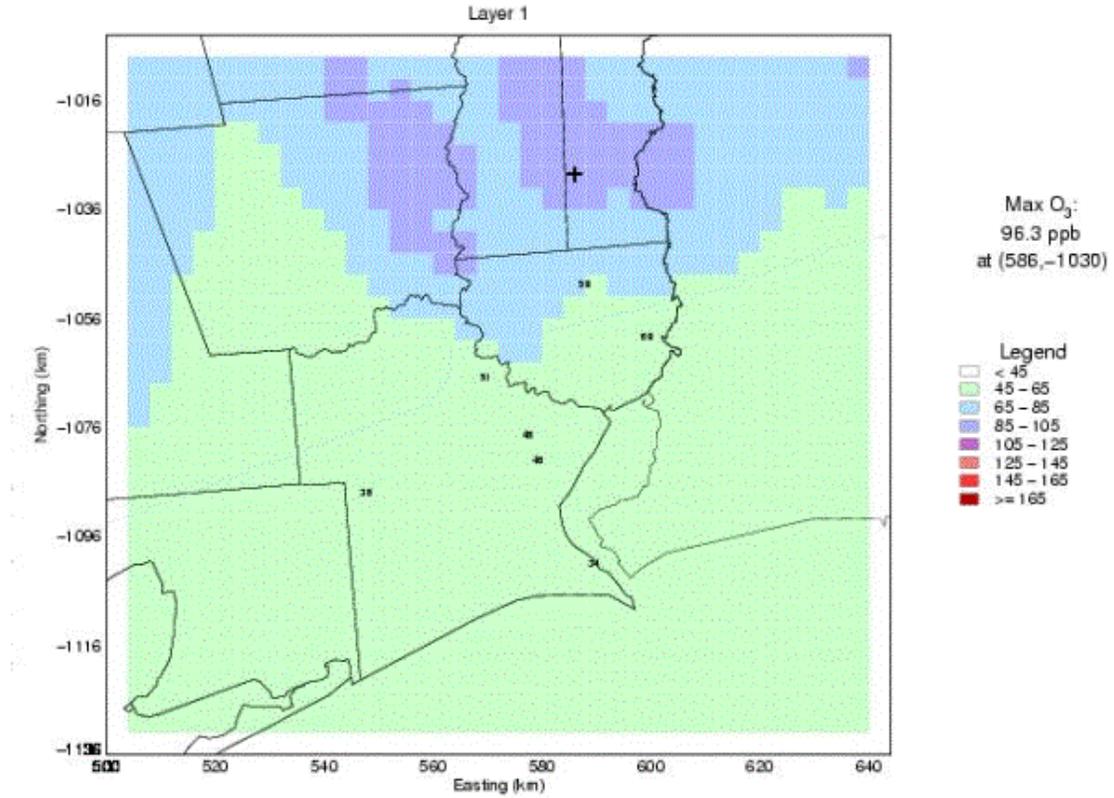


Figure K-75 1-hour Ozone Isopleth Plot August 28, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 08/29/2000

HGMCR: camx403.base5b.psit02n2

Layer 1

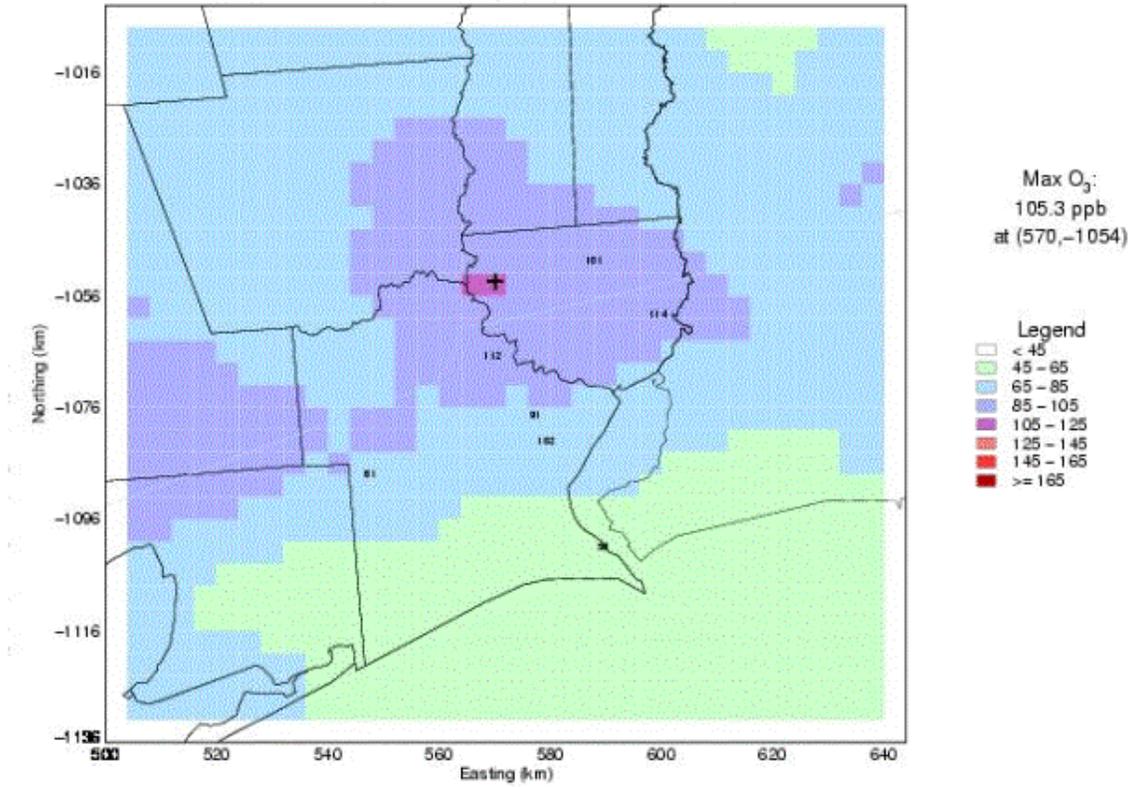


Figure K-76 1-hour Ozone Isopleth Plot August 29, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 08/30/2000

HGMCR: camx403.base5b.psite2n2

Layer 1

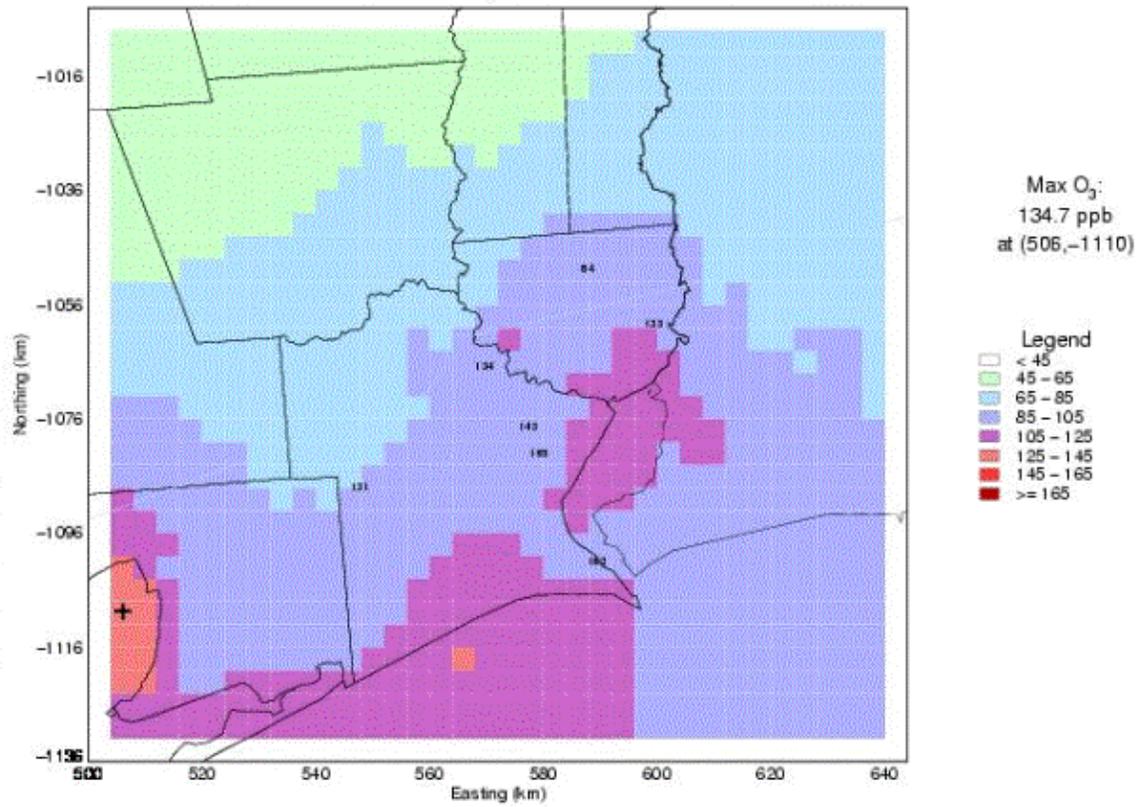


Figure K-77 1-hour Ozone Isopleth Plot August 30, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 08/31/2000

HGMCR: camx403.base5b.psito2n2

Layer 1

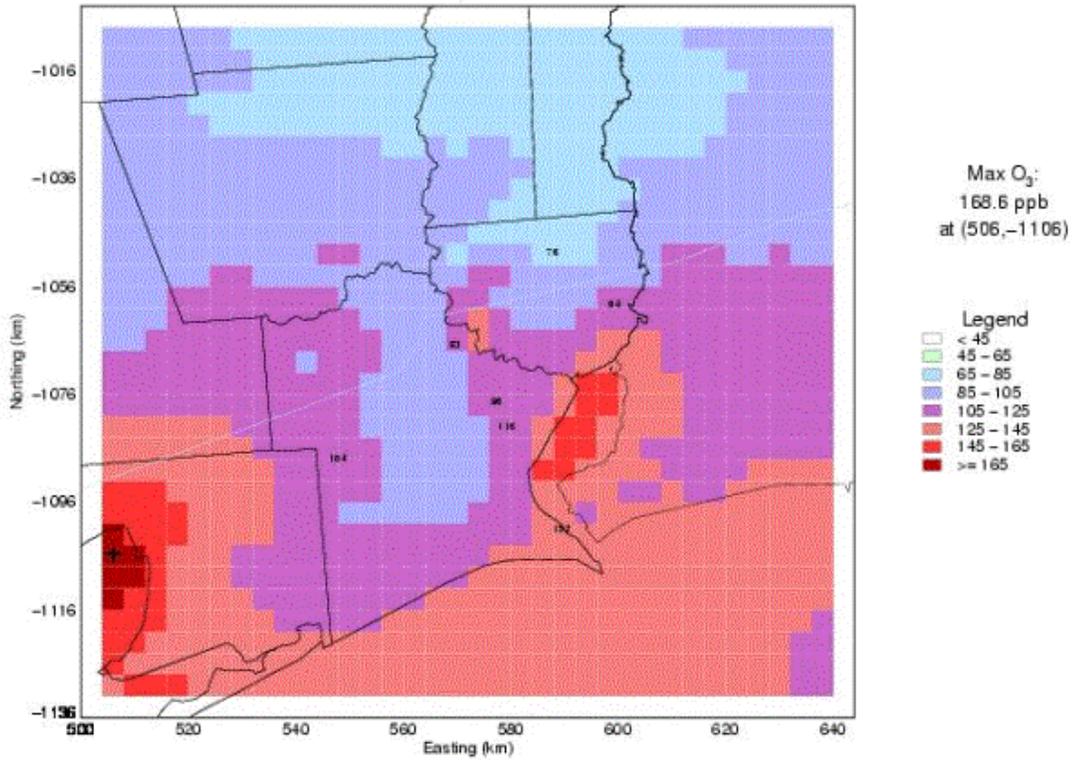


Figure K-78 1-hour Ozone Isopleth Plot August 31, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 09/01/2000

HGMCR: camx403.base5b.psite2r2

Layer 1

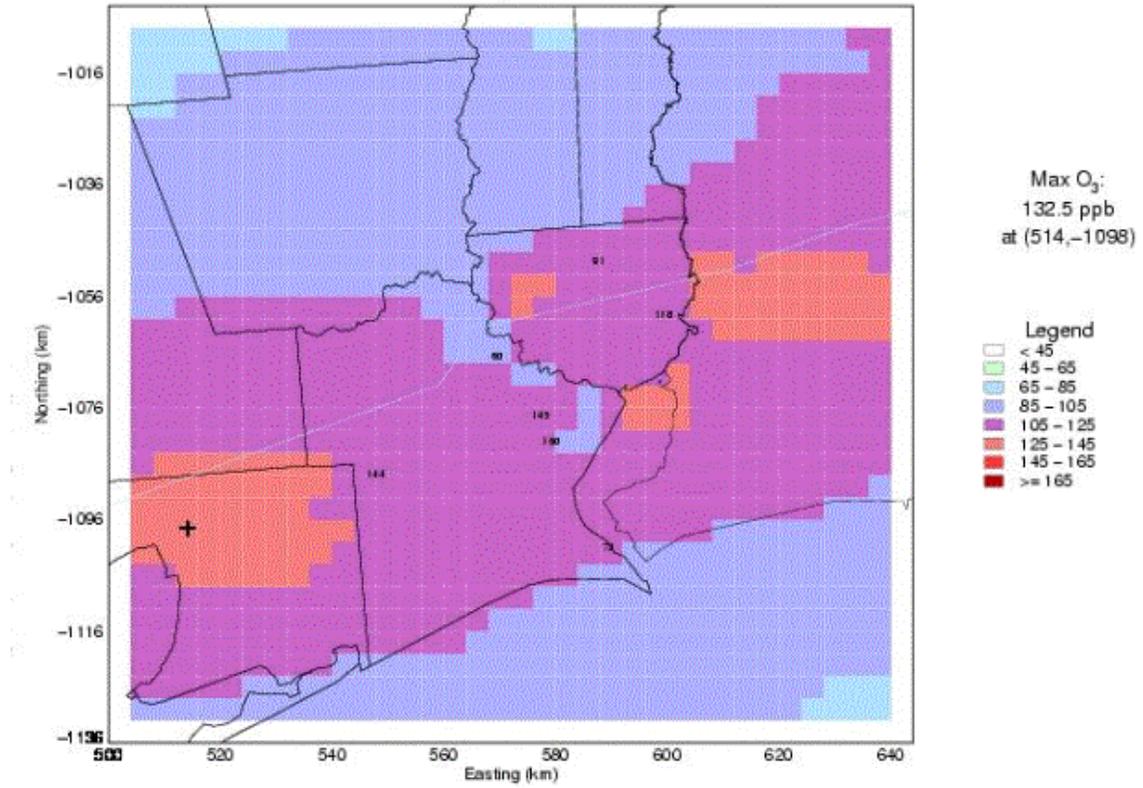


Figure K-79 1-hour Ozone Isopleth Plot September 1, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 09/02/2000

HGMCR: camx403.base5b.psite2r2

Layer 1

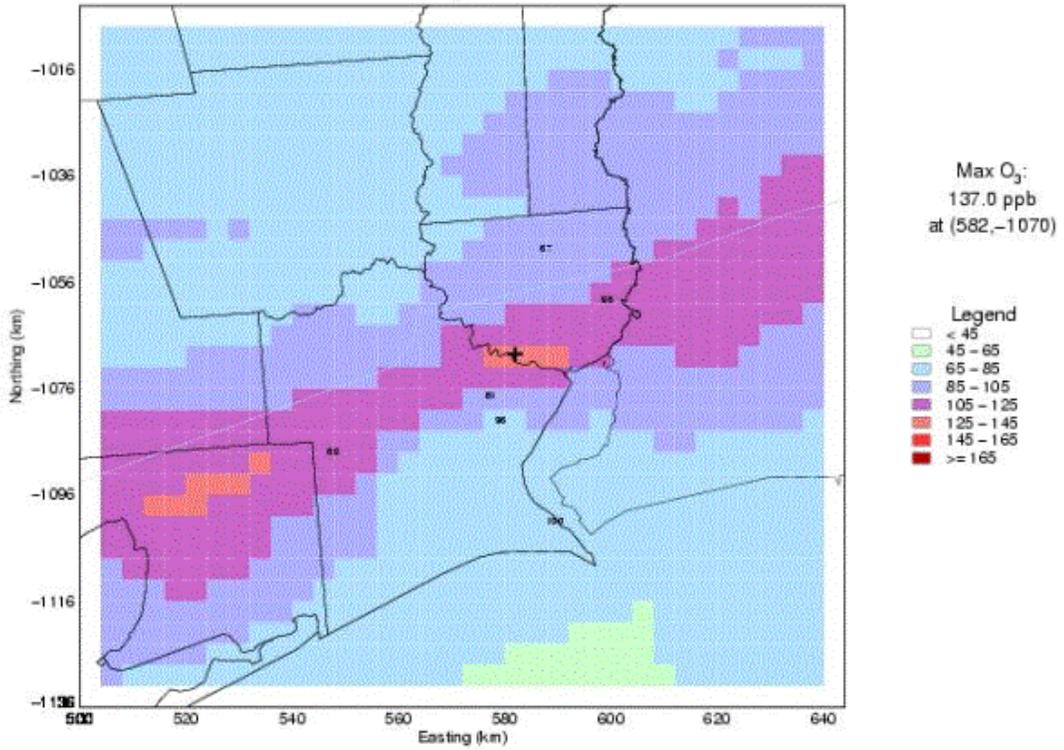


Figure K-80 1-hour Ozone Isopleth Plot September 2, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 09/03/2000

HGMCR: camx403.base5b.psito2n2

Layer 1

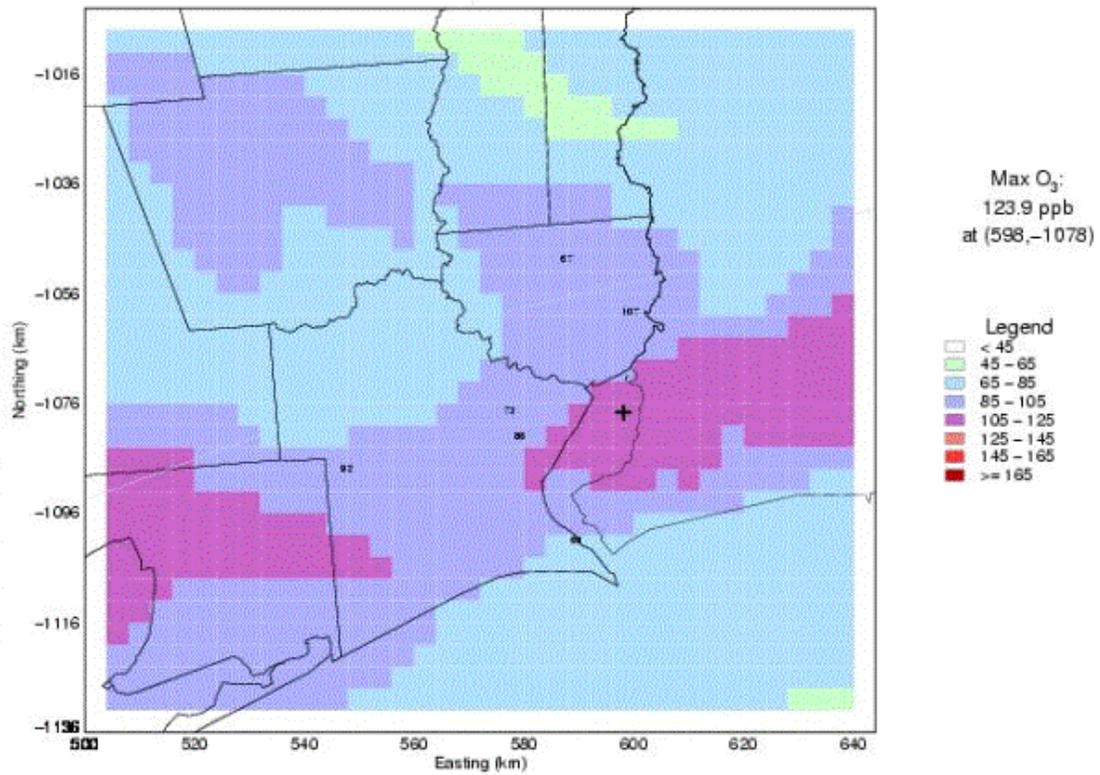


Figure K-81 1-hour Ozone Isopleth Plot September 3, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 09/04/2000

HGMCR: camx403.base5b.psit02n2

Layer 1

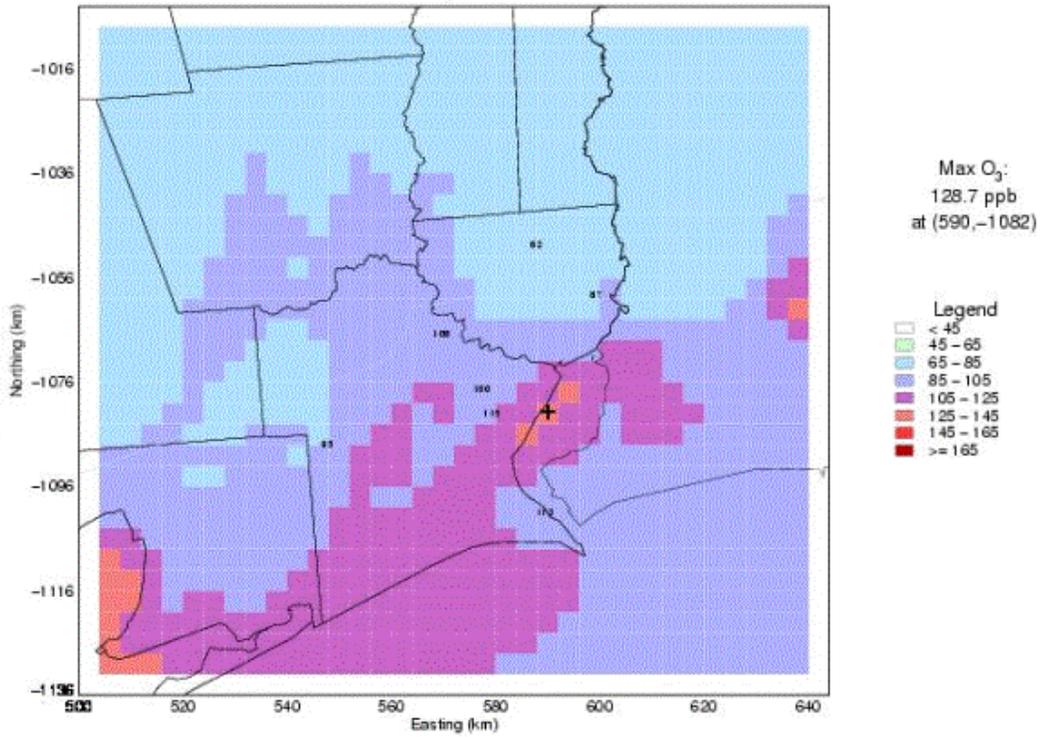


Figure K-82 1-hour Ozone Isopleth Plot September 4, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 09/05/2000

HGMCR: camx403.base5b.psite2n2

Layer 1

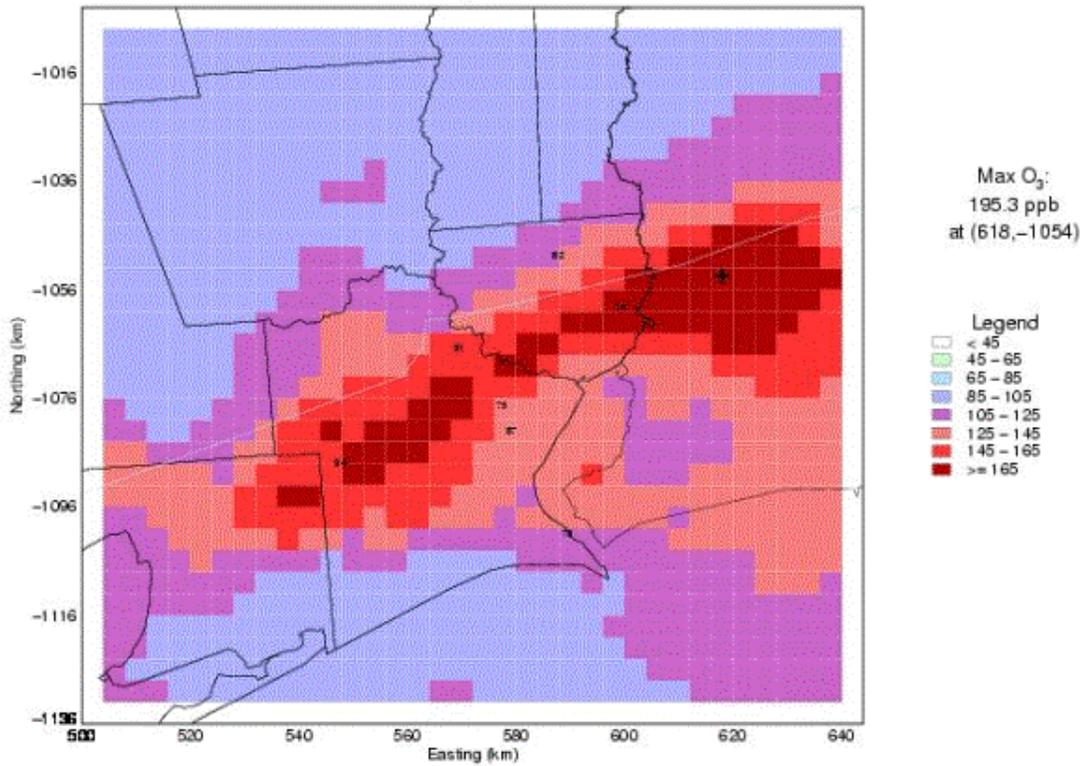


Figure K-83 1-hour Ozone Isopleth Plot September 5, 2000

Daily Maximum Hourly Average O₃ Concentrations (ppb) for 09/06/2000

HGMCR: camx403.base5b.psit02n2

Layer 1

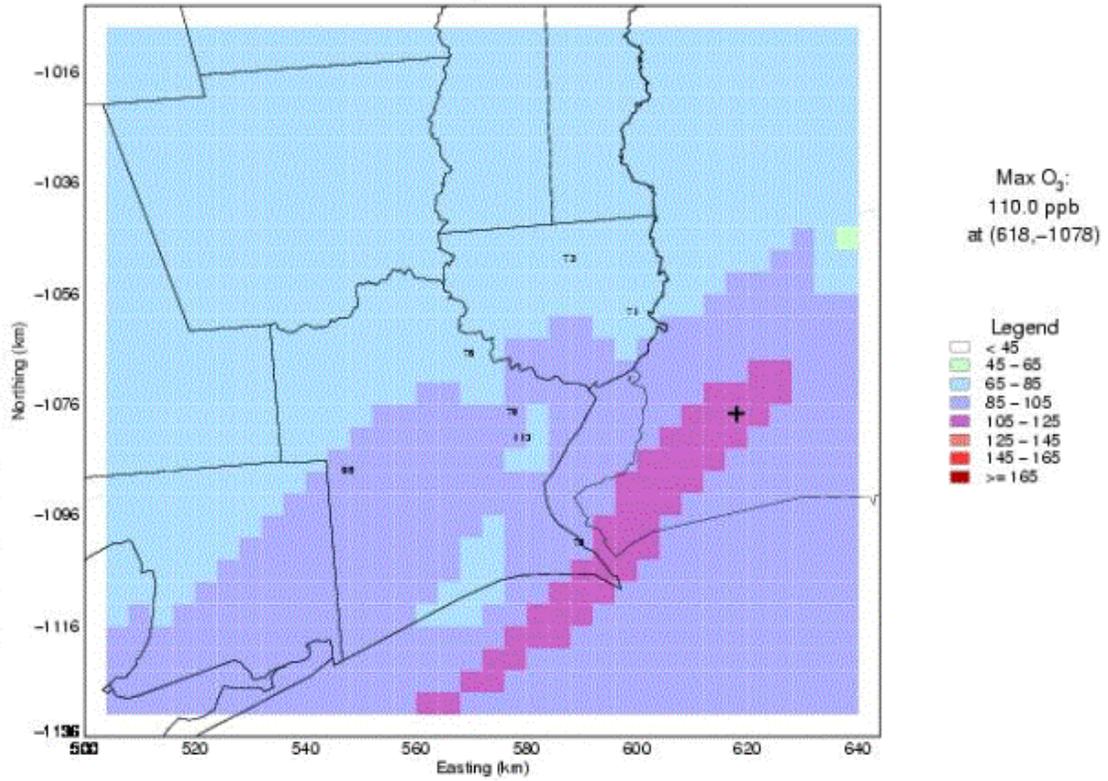


Figure K-84 1-hour Ozone Isopleth Plot September 6, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 08/10/2000

HGMCR: camx403.base5b.pto2n2

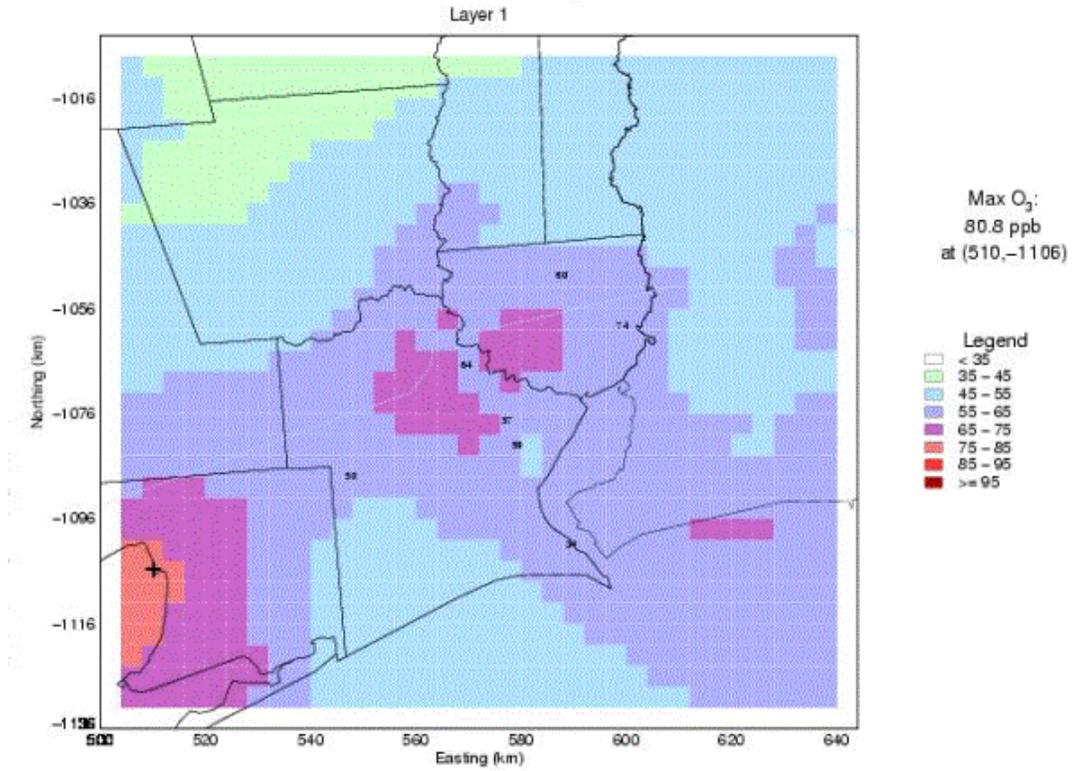


Figure K-85 8-hour Ozone Isopleth Plot August 10, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 08/11/2000

HGMCR: camx403.base5b.pto2n2

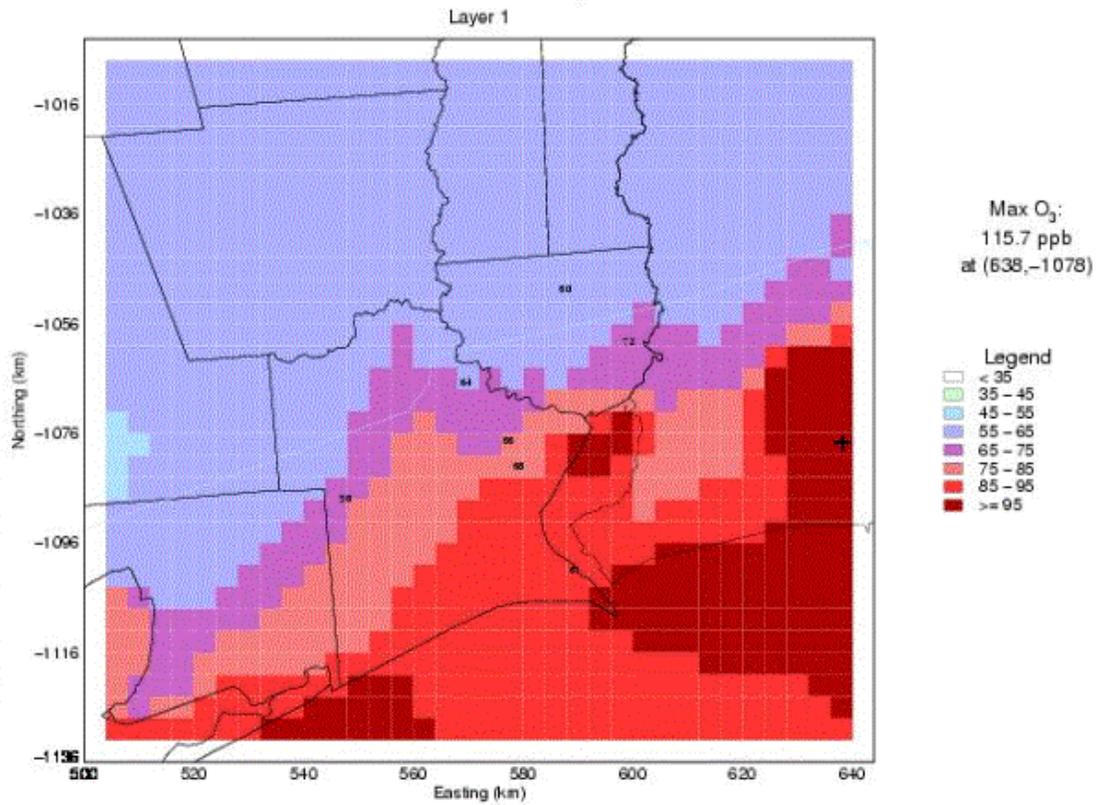


Figure K-86 8-hour Ozone Isopleth Plot August 11, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 08/12/2000

HGMCR: camx403.base5b.pto2n2

Layer 1

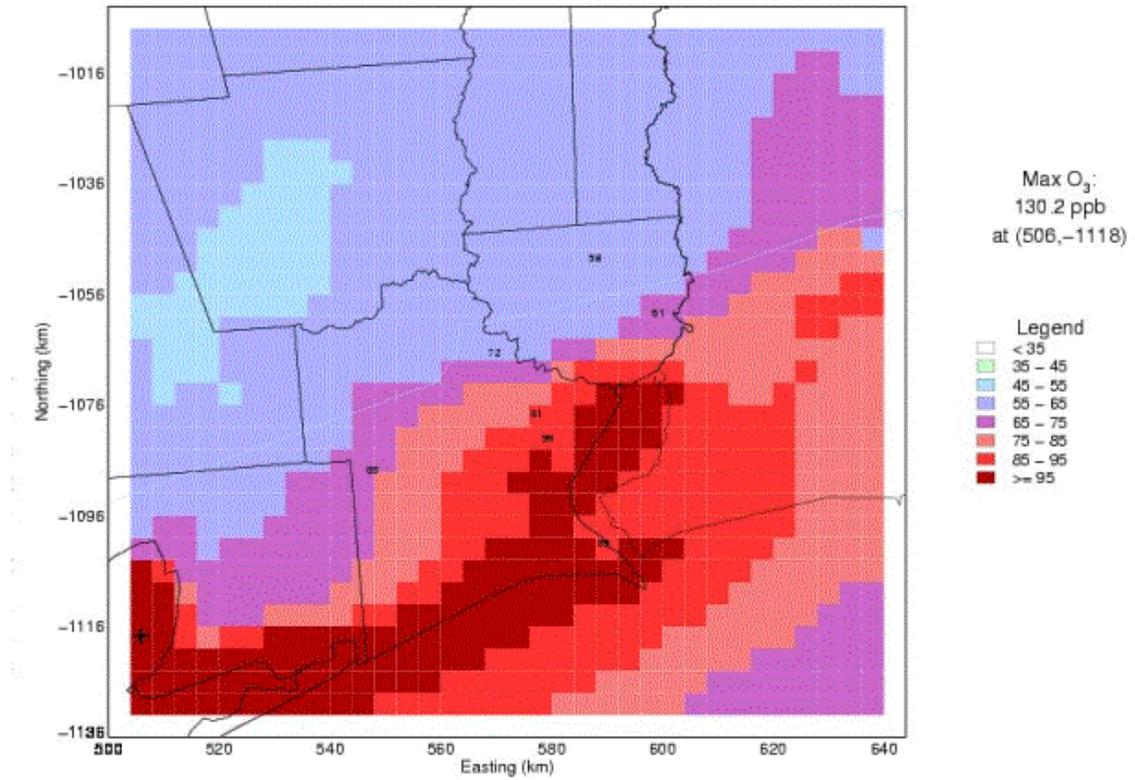


Figure K-87 8-hour Ozone Isopleth Plot August 12, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 08/13/2000

HGMCR: camx403.base5b.pto2n2

Layer 1

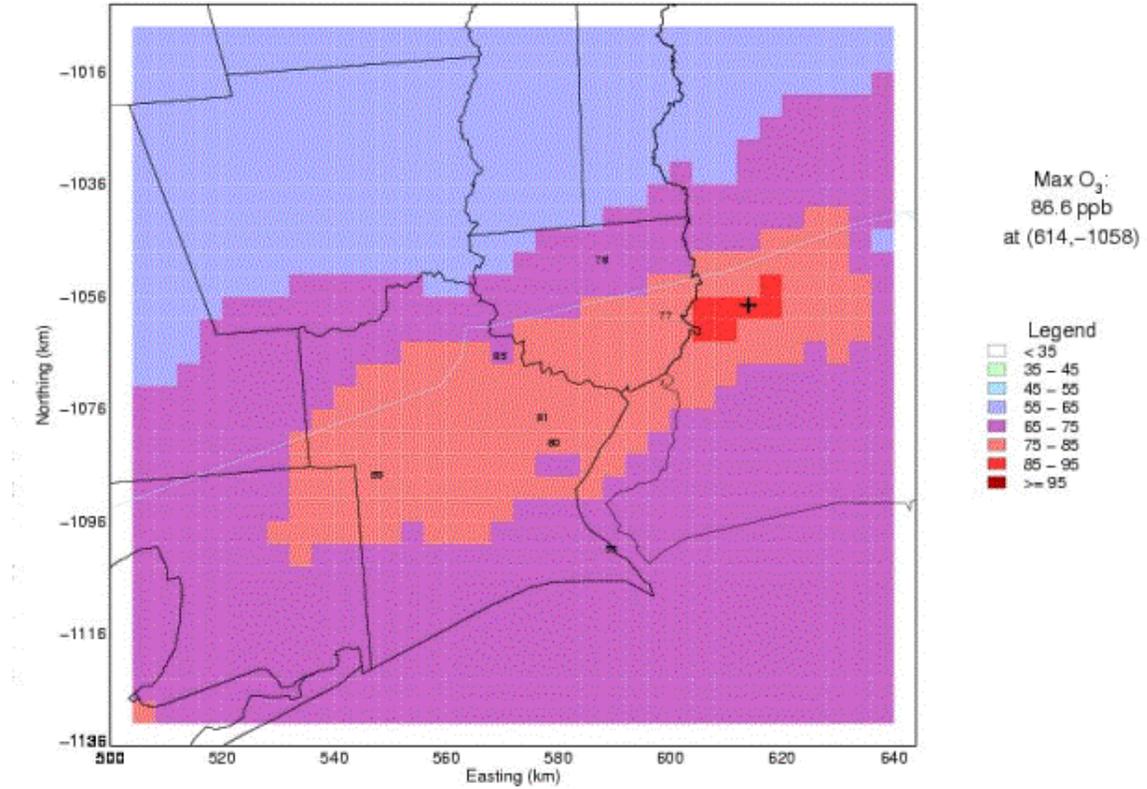


Figure K-88 8-hour Ozone Isopleth Plot August 13, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 08/28/2000

HGMCR: camx403.base5b.psite2n2

Layer 1

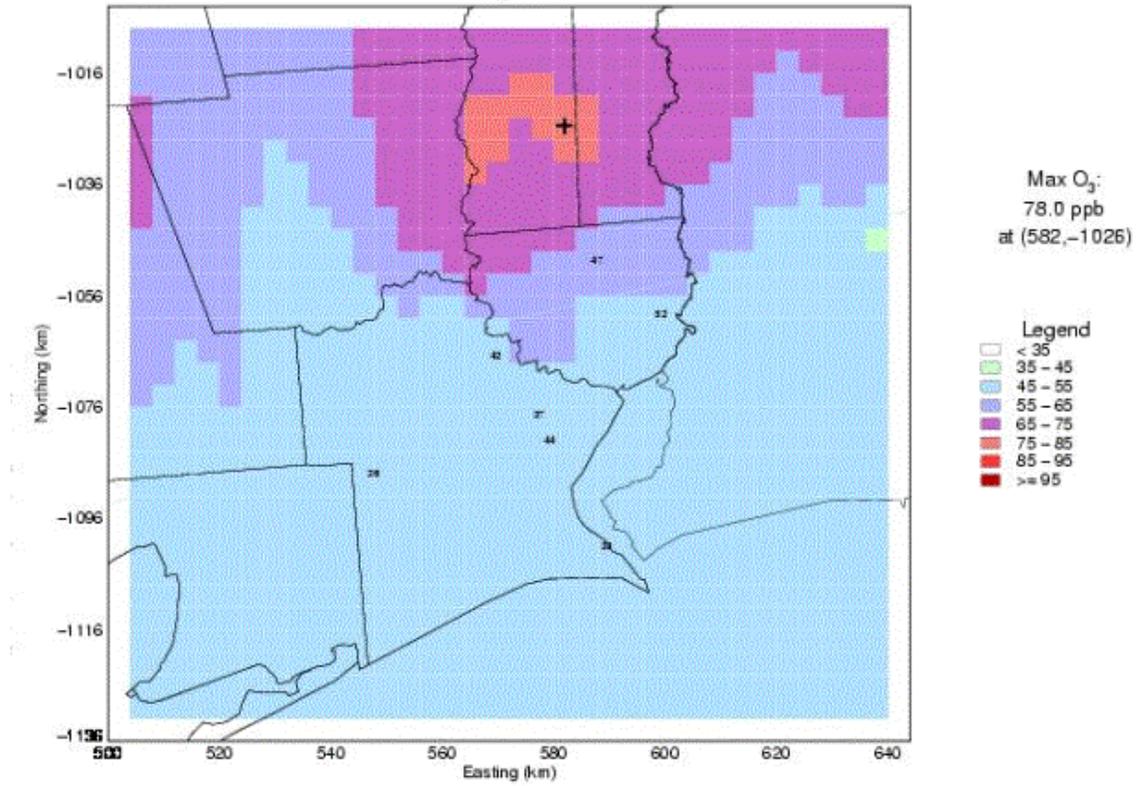


Figure K-89 8-hour Ozone Isopleth Plot August 28, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 08/29/2000

HGMCR: camx403.base5b.psito2n2

Layer 1

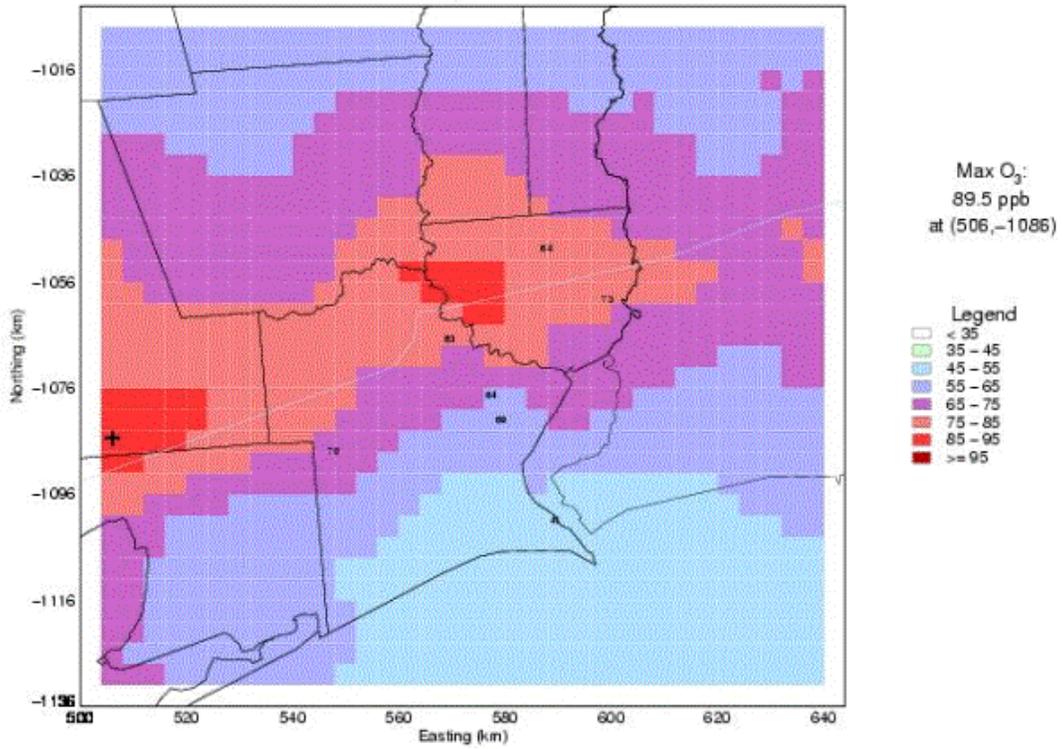


Figure K-90 8-hour Ozone Isopleth Plot August 29, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 08/30/2000

HGMCR: camx403_base5b_psi02n2

Layer 1

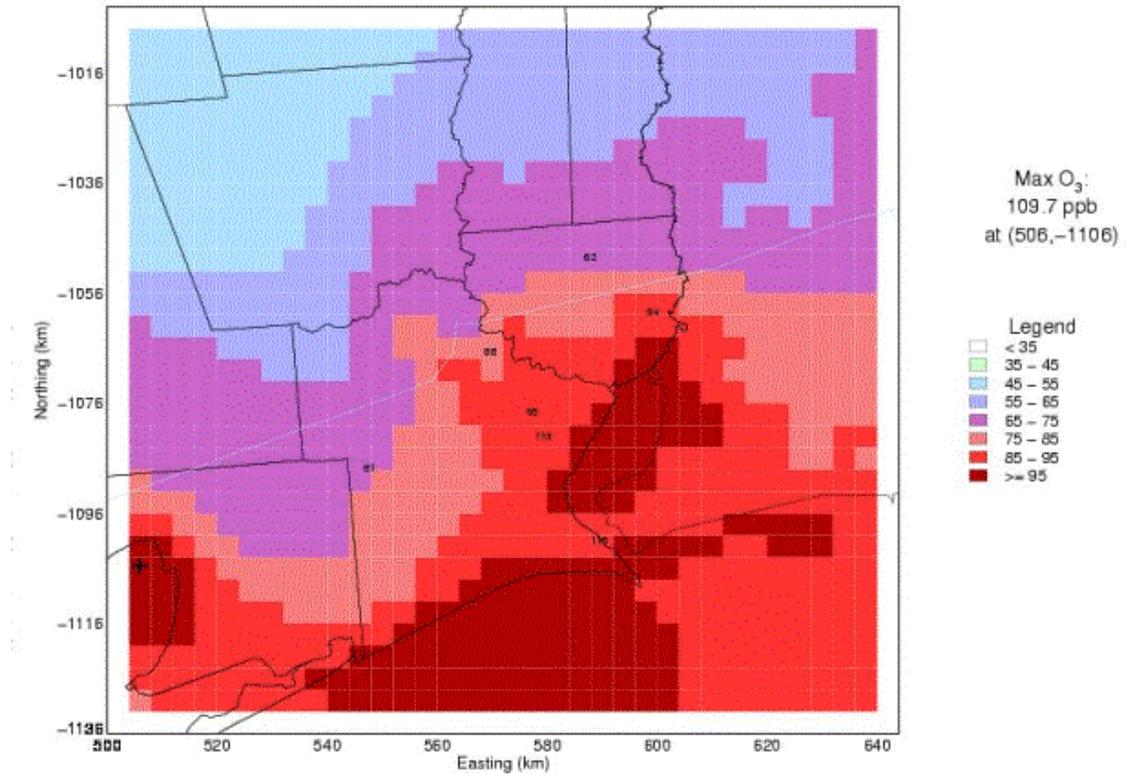


Figure K-91 8-hour Ozone Isopleth Plot August 30, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 08/31/2000

HGMCR: camx403_base5b_psite2n2

Layer 1

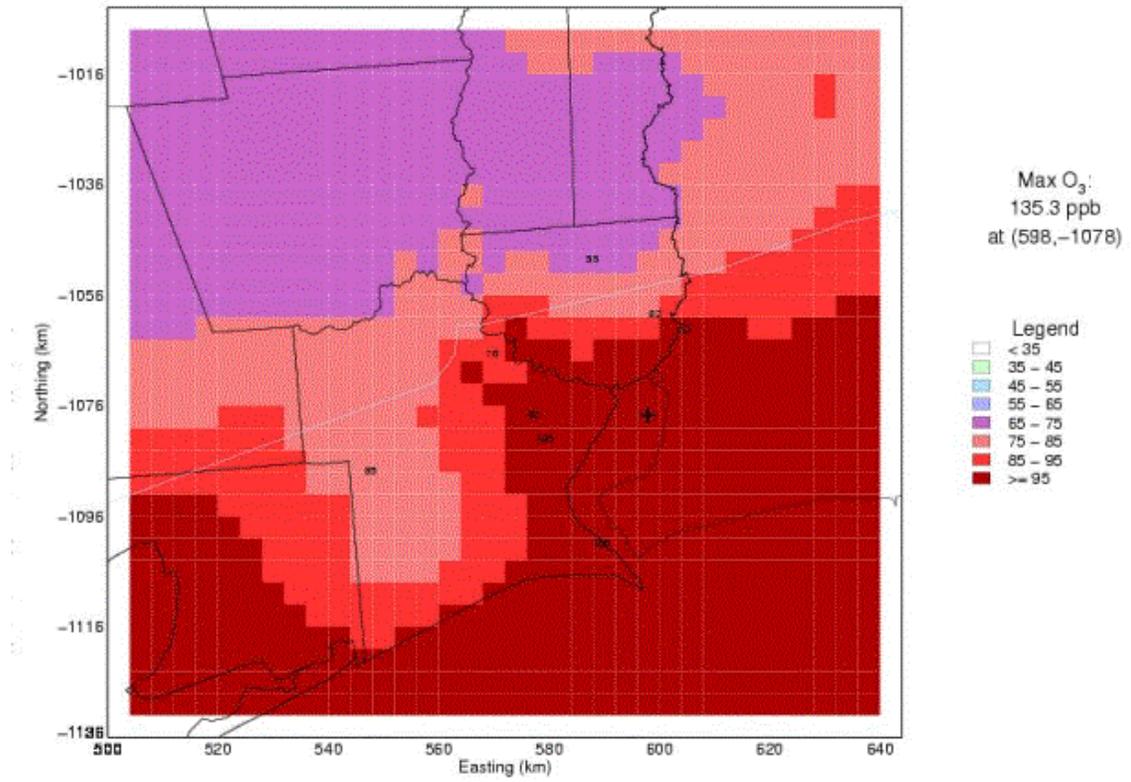


Figure K-92 8-hour Ozone Isopleth Plot August 31, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 09/01/2000

HGMCR: camx403_base5b_psi02n2

Layer 1

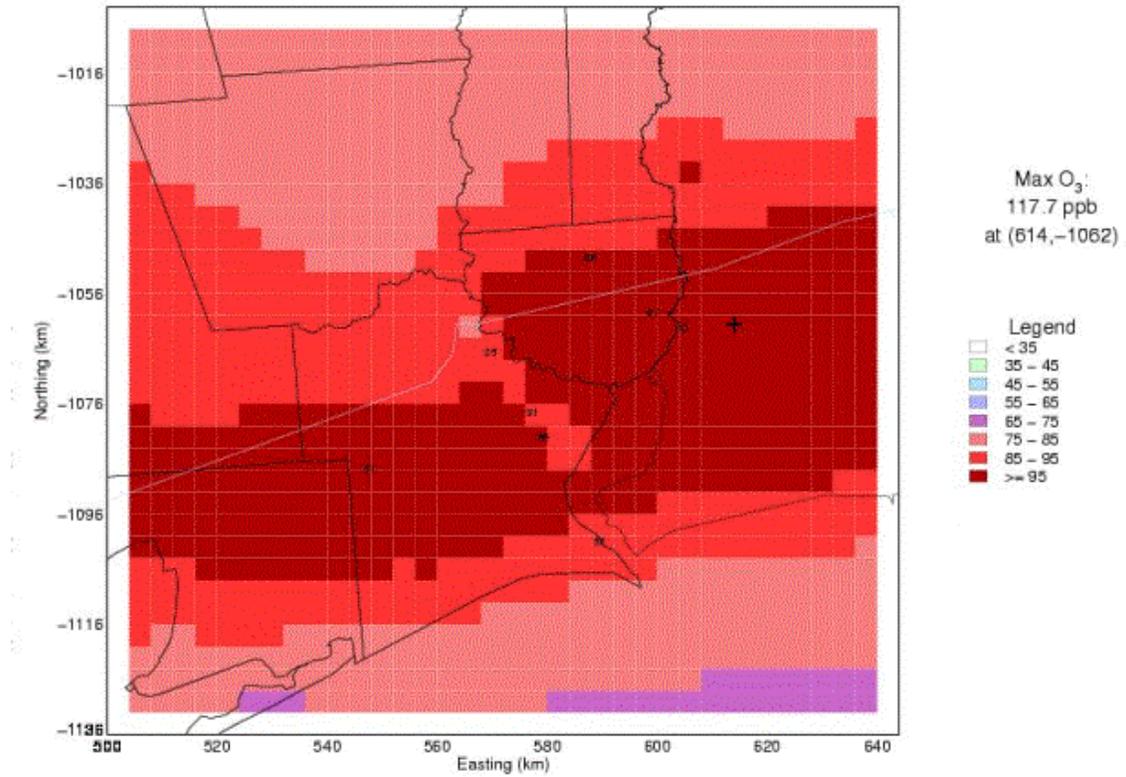


Figure K-93 8-hour Ozone Isopleth Plot September 1, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 09/02/2000

HGMCR: camx403.base5b.psite2n2

Layer 1

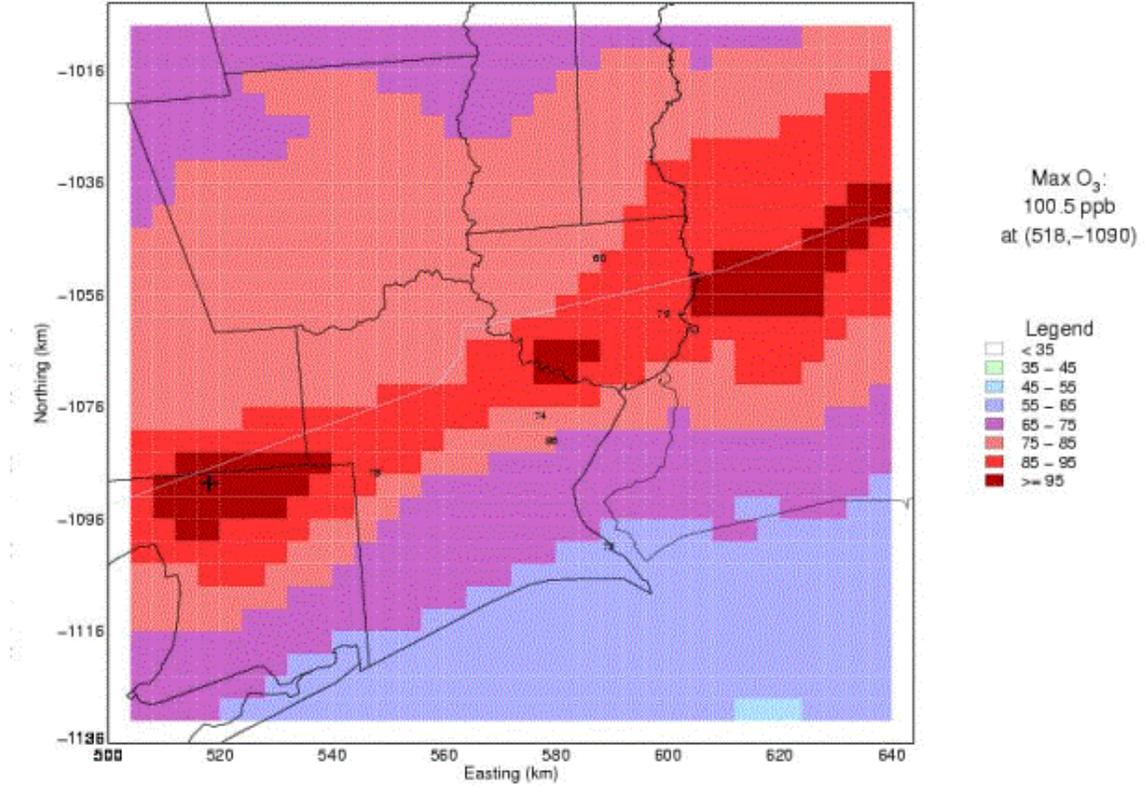


Figure K-94 8-hour Ozone Isopleth Plot September 2, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 09/03/2000

HGMCR: camx403.base5b.psito2n2

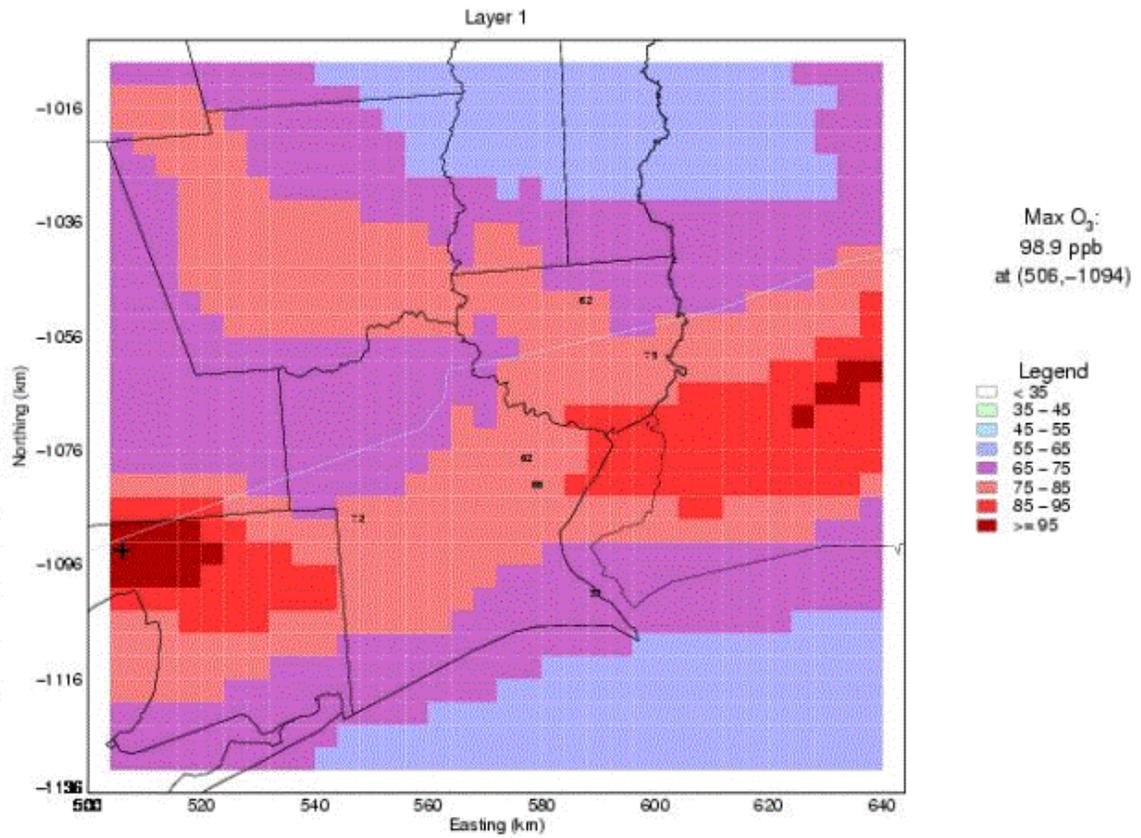


Figure K-95 8-hour Ozone Isopleth Plot September 3, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 09/04/2000

HGMCR: camx403_base5b_psite2n2

Layer 1

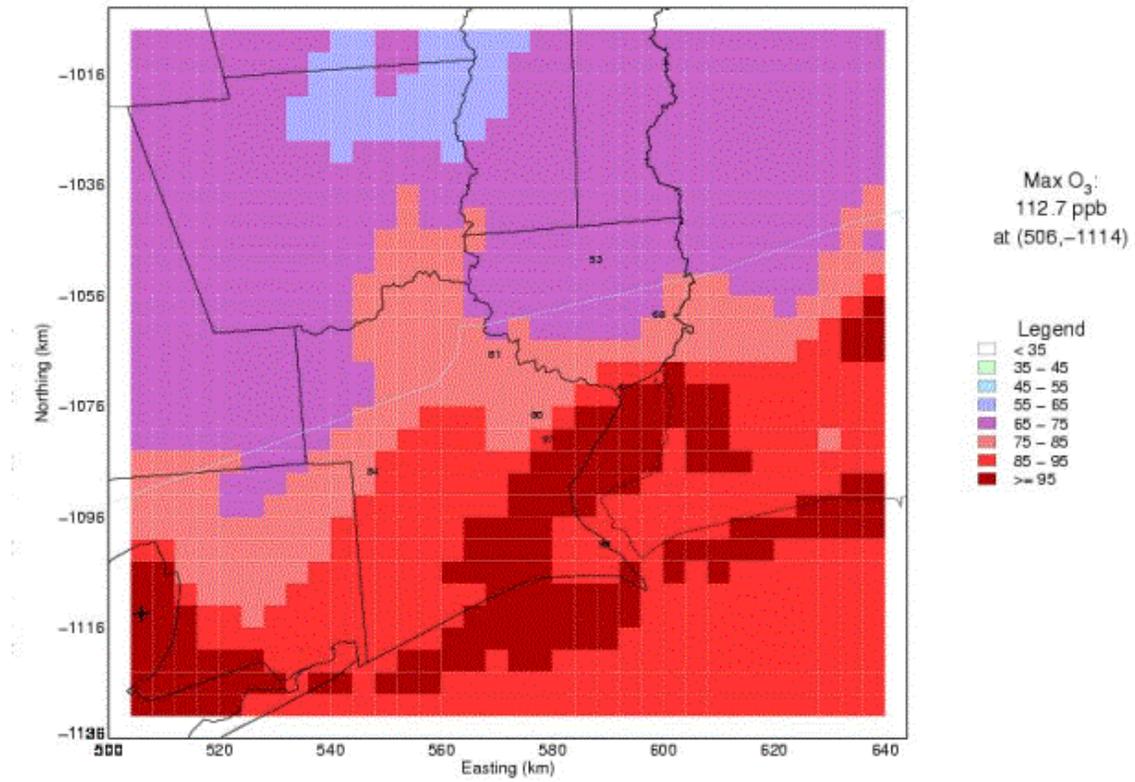


Figure K-96 8-hour Ozone Isopleth Plot September 4, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 09/05/2000

HGMCR: camx403.base5b.psite2n2

Layer 1

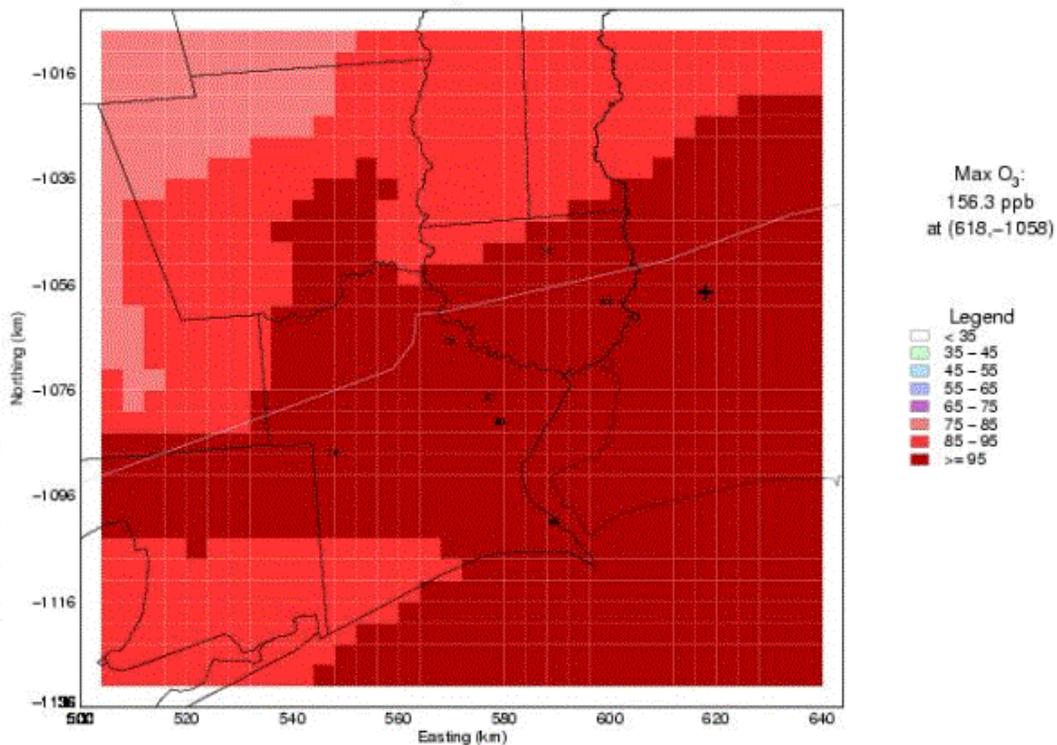


Figure K-97 8-hour Ozone Isopleth Plot September 5, 2000

Daily Maximum 8-Hour Moving Average O₃ Concentrations (ppb) for 09/06/2000

HGMCR: camx403.base5b.psilo2n2

Layer 1

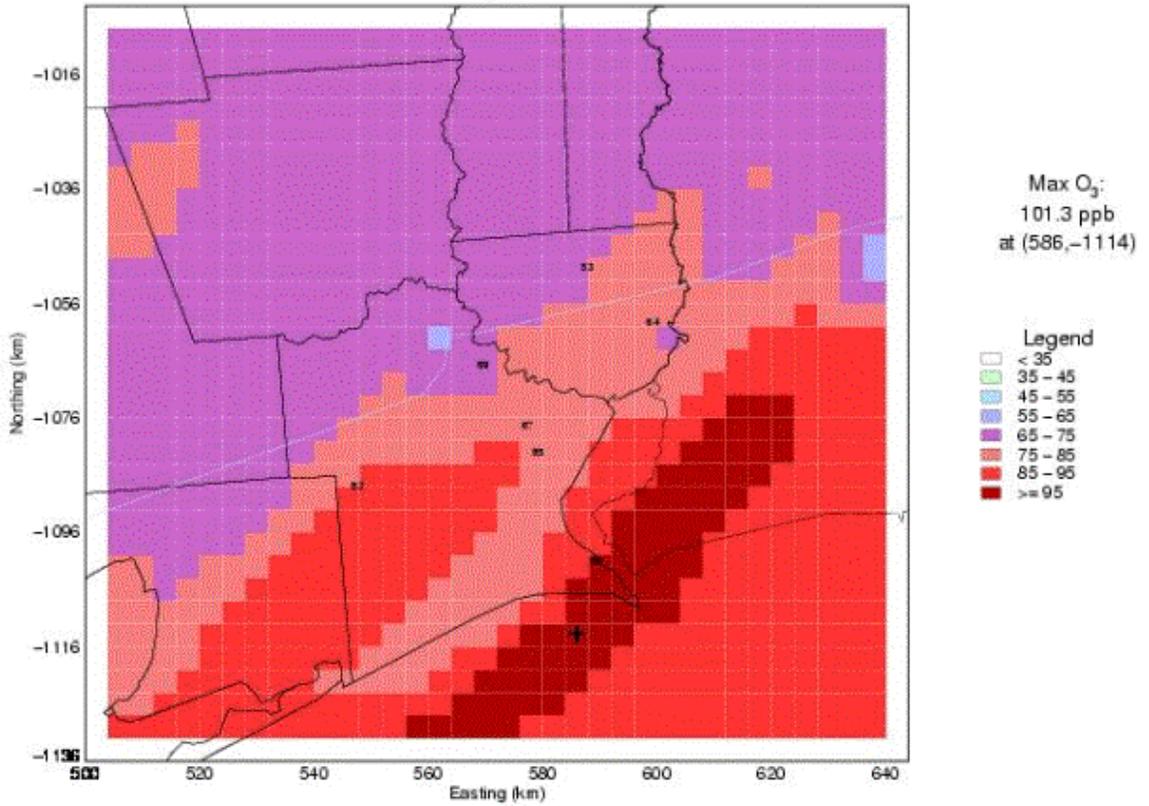


Figure K-98 8-hour Ozone Isopleth Plot September 6, 2000