

MDL 2007 Verification

Daily maps and statistics

1200 UTC OZONE

8-h 5x, 3x

0600 UTC AEROSOLS

1-h 5x, monthly plots, by region

24-h 5x, (running average)

MDL web site: <http://slosh.nws.noaa.gov/aqverif>

Username: aqverif

password: ozone



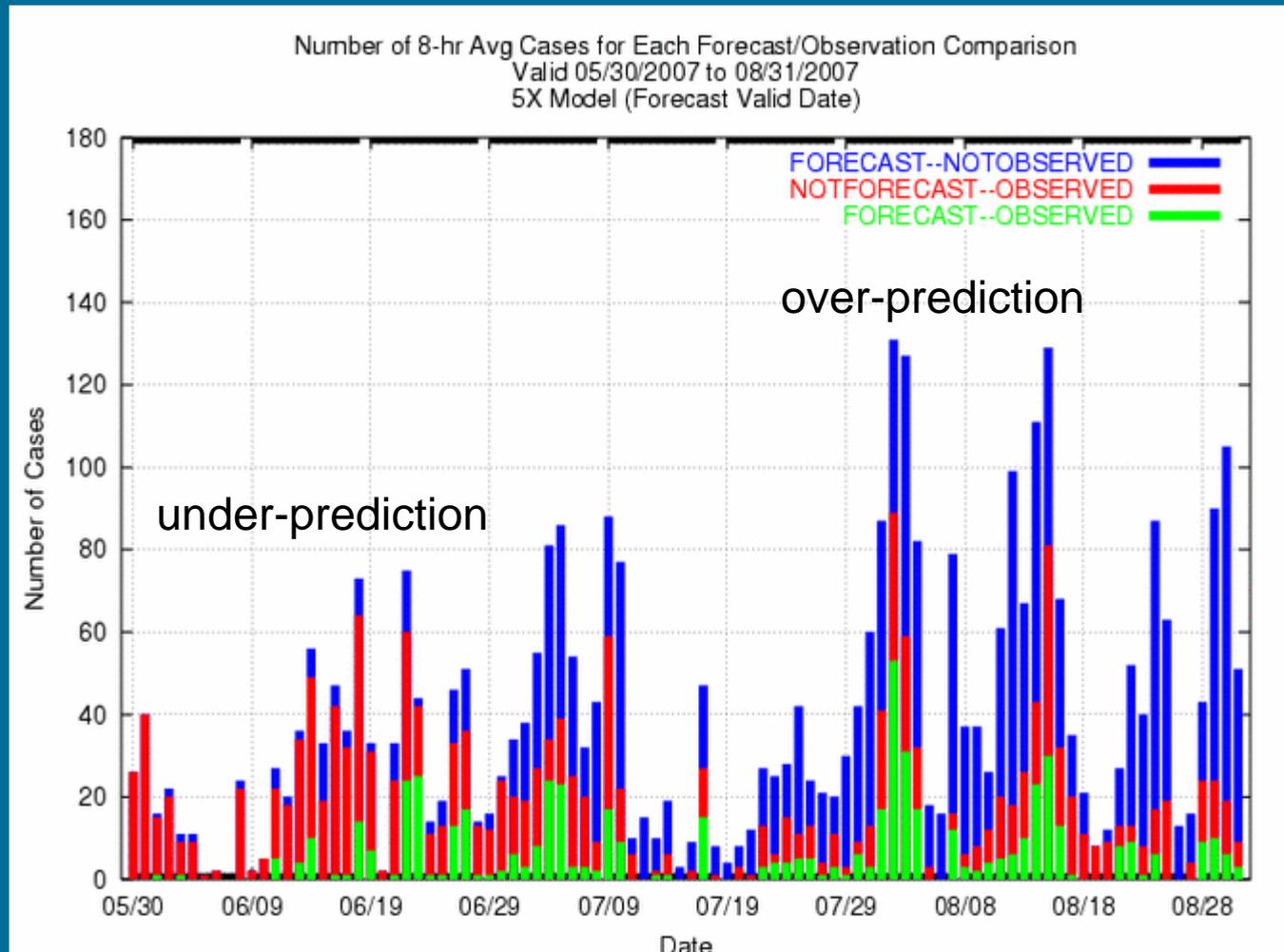
2x2 Contingency Definitions

		Observed	
		Yes	No
Forecast	Yes	a	b
	No	c	d
		yy	yn
		ny	nn

- $FC = (a + d) / (a + b + c + d)$
- $TS = a / (a + b + c)$
- $POD = a / (a + c)$
- $FAR = b / (a + b)$

(1)

Ozone: 5x, daily max of 8-h avg June – August, 2007, 1200 UTC

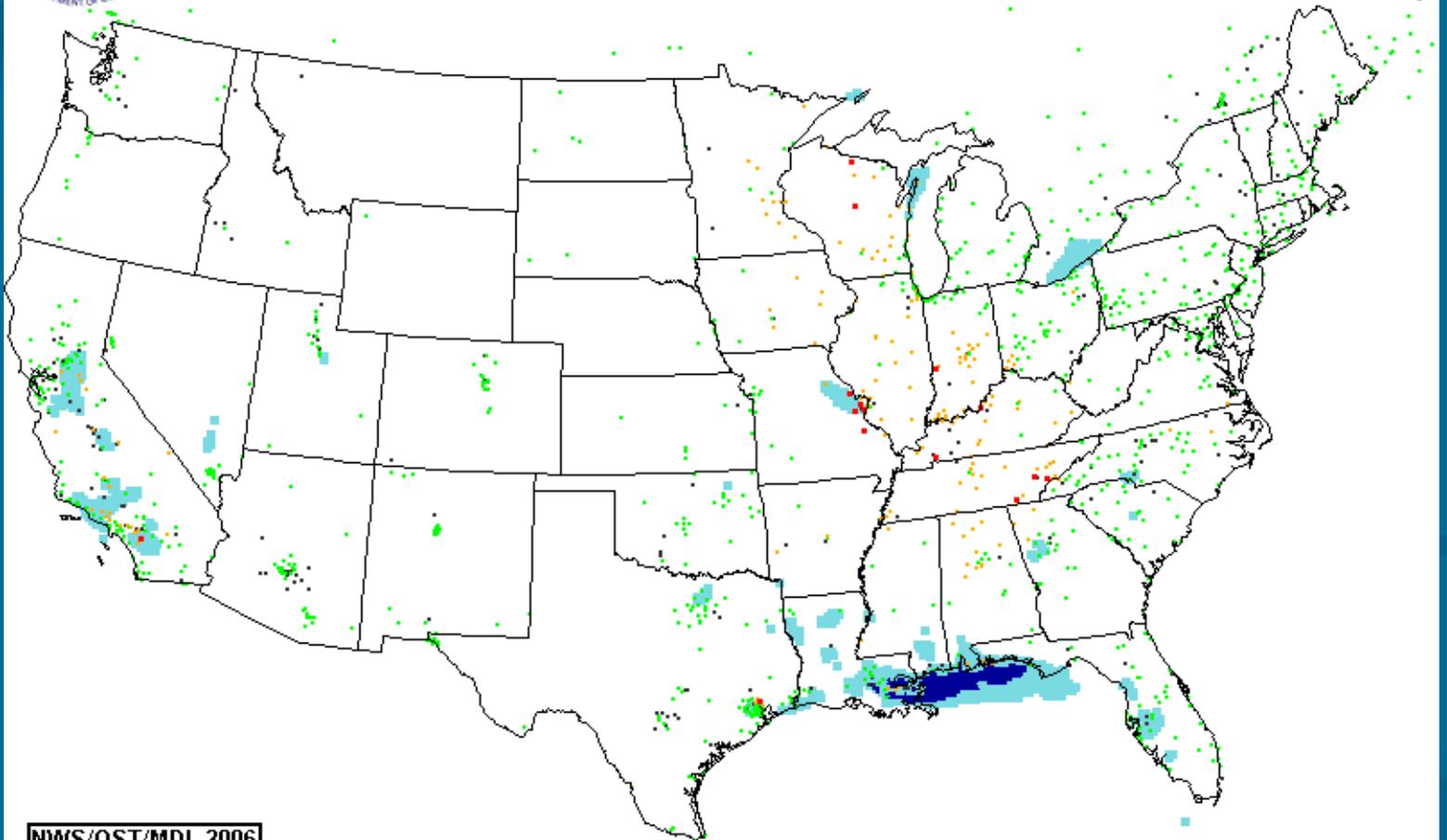


5x, June 12, 2007



24 Hr Ozone Maxima, Obs and Model
Eight Hour Average, Threshold = 85 ppb
Midnight To Midnight EDT 20070612
5X (Experimental) Grid 122

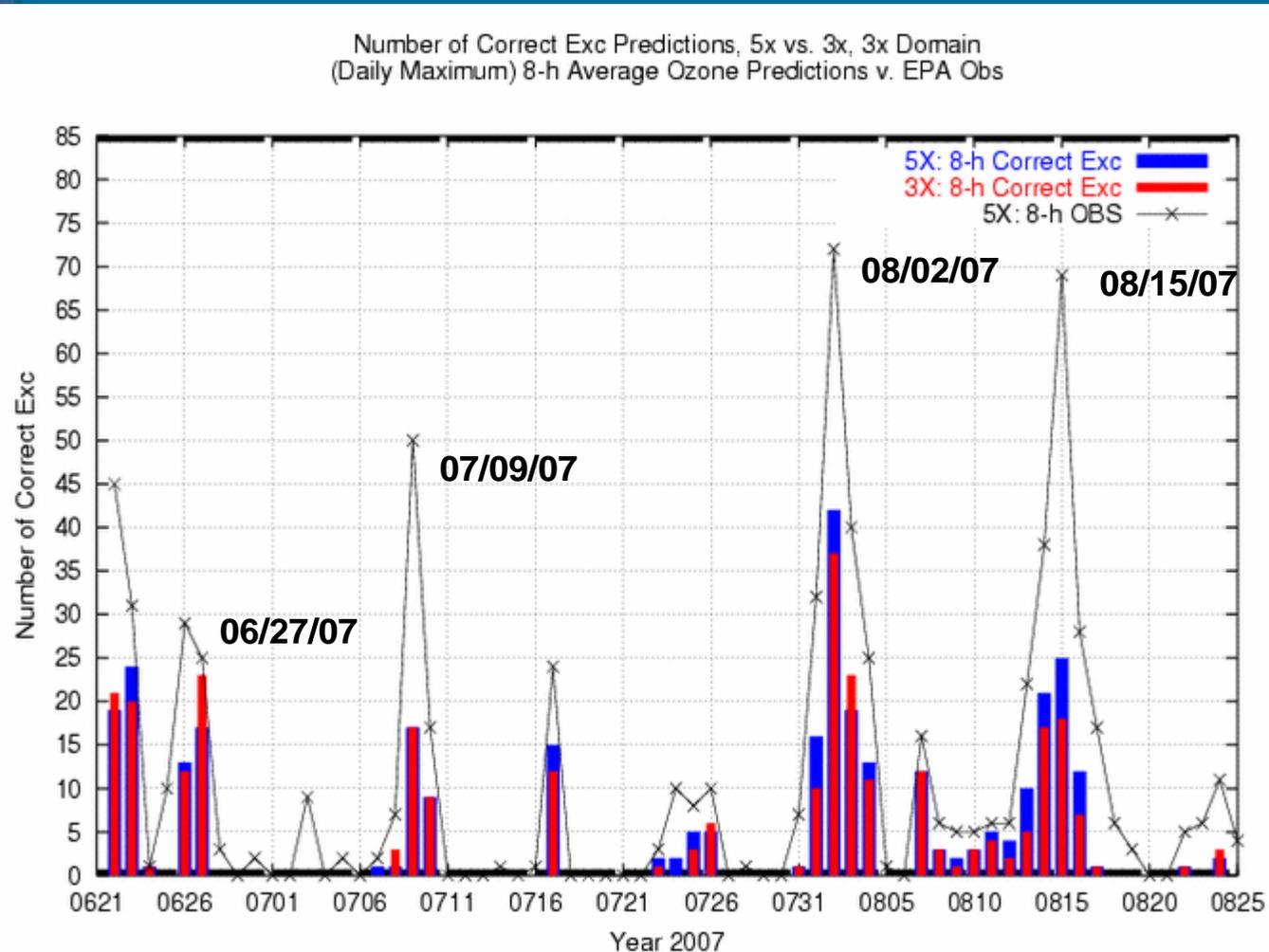
Gray	No Data
Green	Low
Gold/MdBlue	71-84 ppb
Red/DkBlue	Exceedance



NWS/OST/MDL 2006

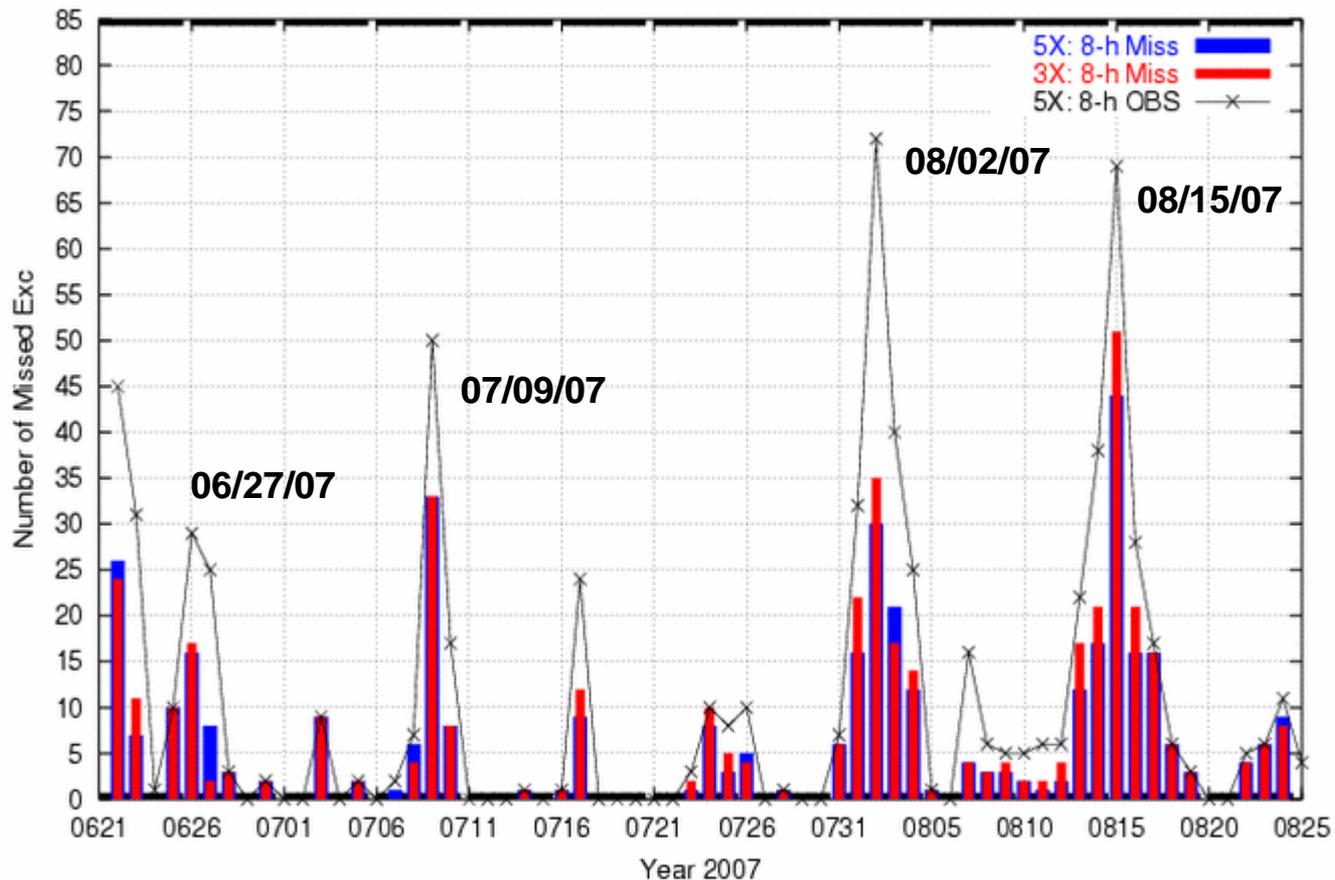


Number of correct exc. predictions 8-h ozone, 5x vs. 3x, 3x domain slightly higher for 5x

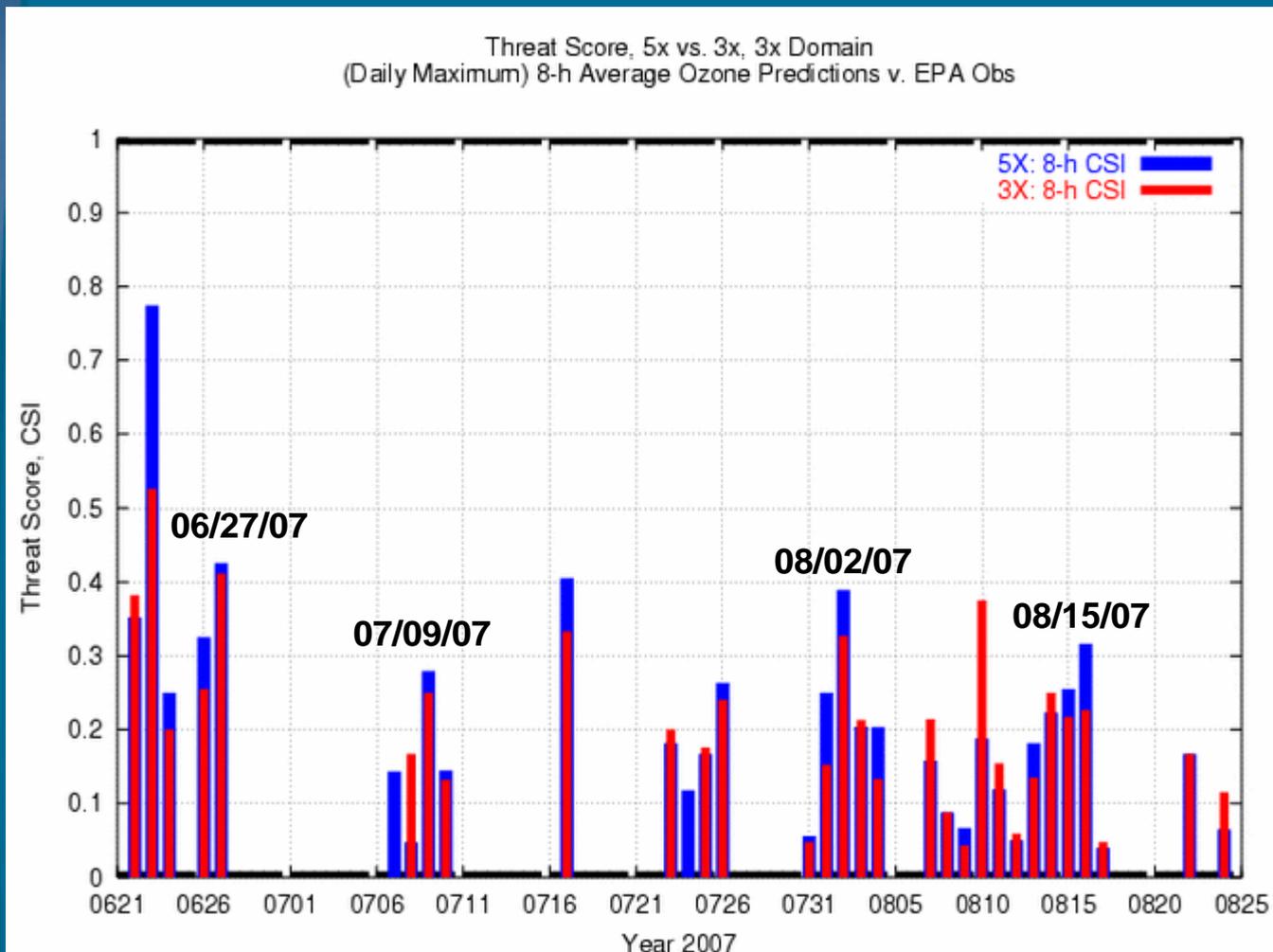


Number of missed exc. Predictions 8-h ozone, 5x vs. 3x, 3x domain slightly lower for 5x

Number of Missed Exceedance Predictions, 5x vs. 3x, 3x Domain
(Daily Maximum) 8-h Average Ozone Predictions v. EPA Obs



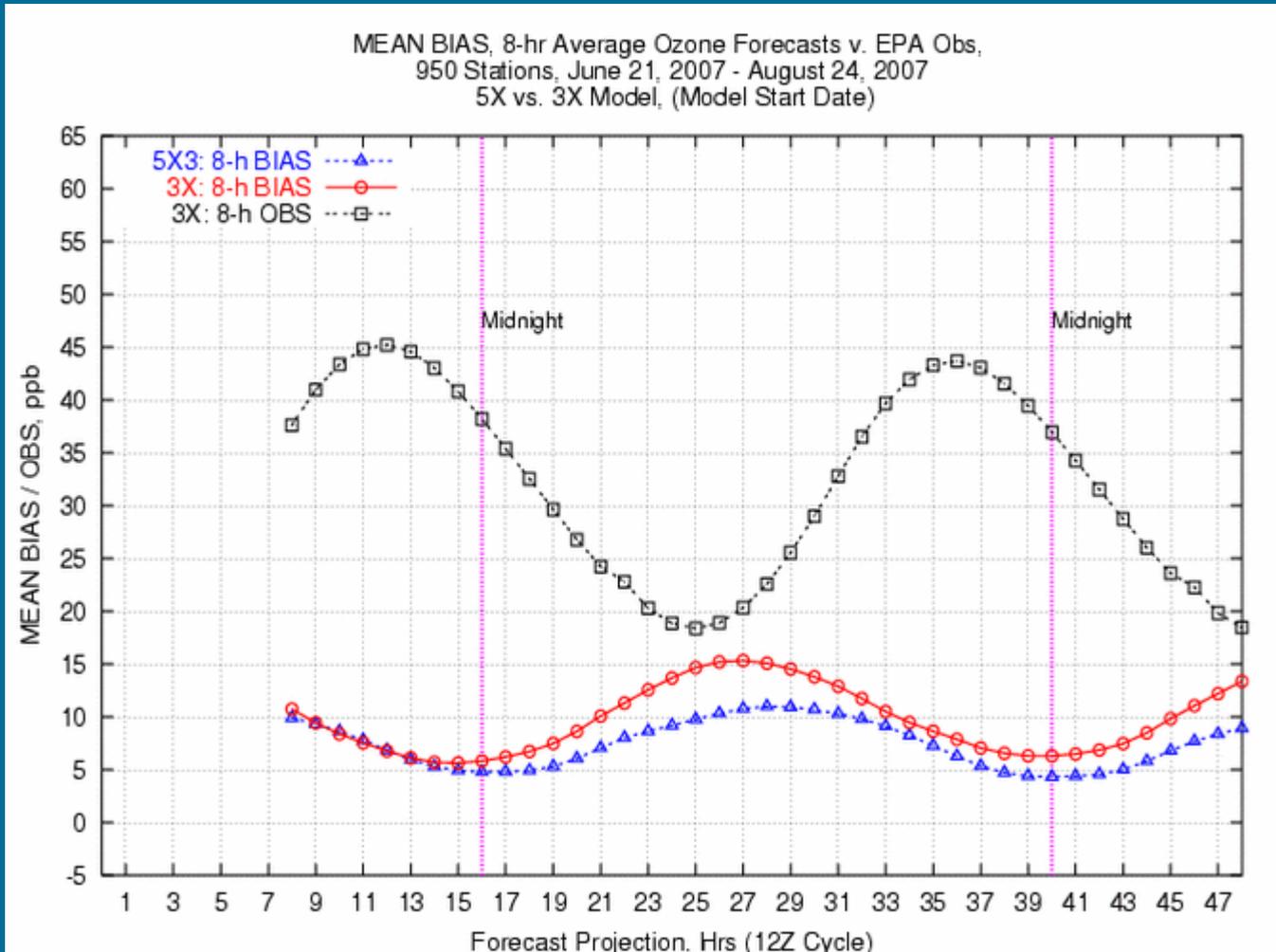
Threat Score, 5x vs. 3x 8-h ozone, 5x slightly higher



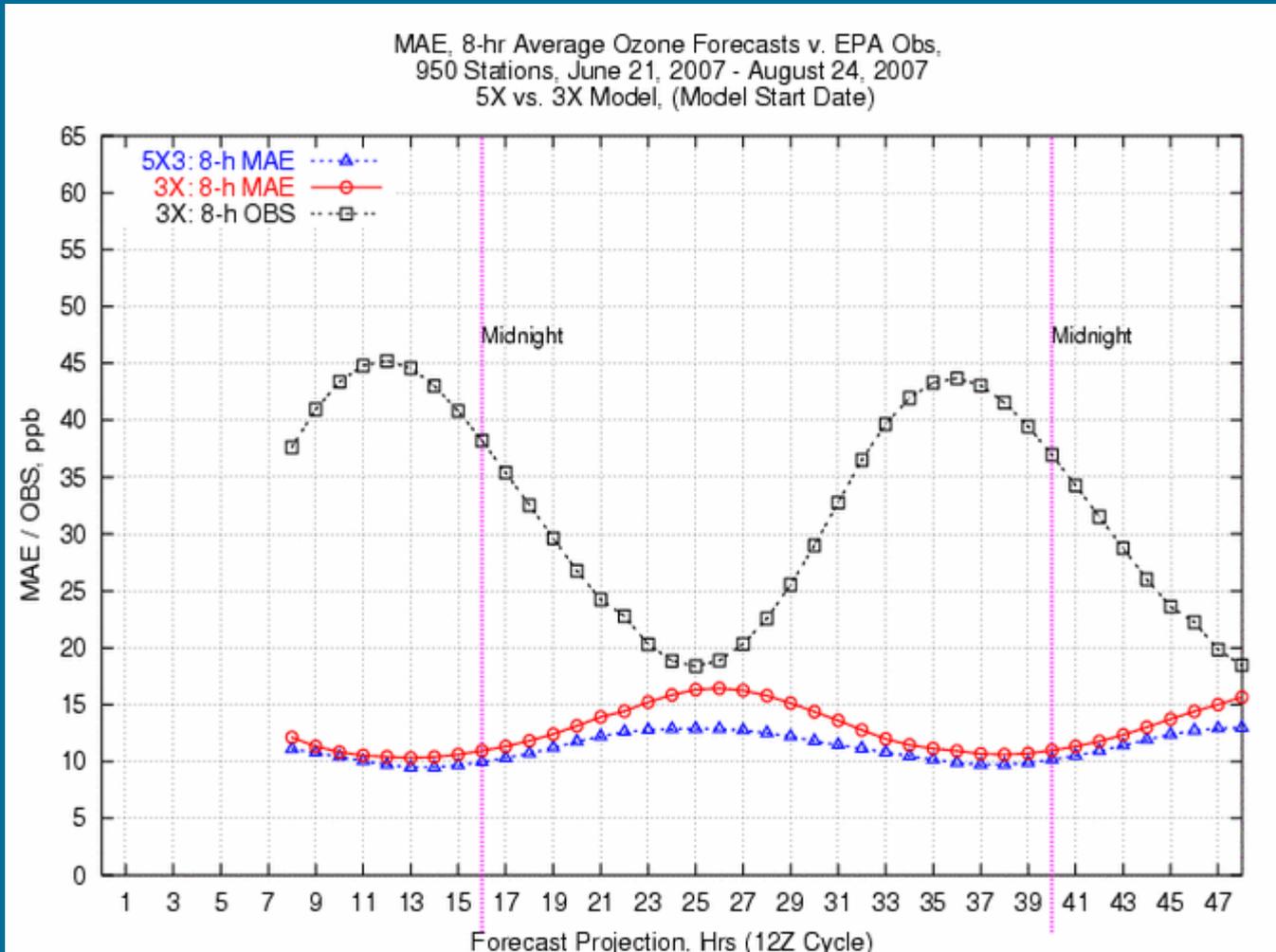
BIAS, 8-h ozone

3x vs. 5x, 3x domain

3x slightly higher near peak, proj 36



MAE, 8-h ozone 3x vs. 5x, 3x domain 3x slightly higher near peak ozone

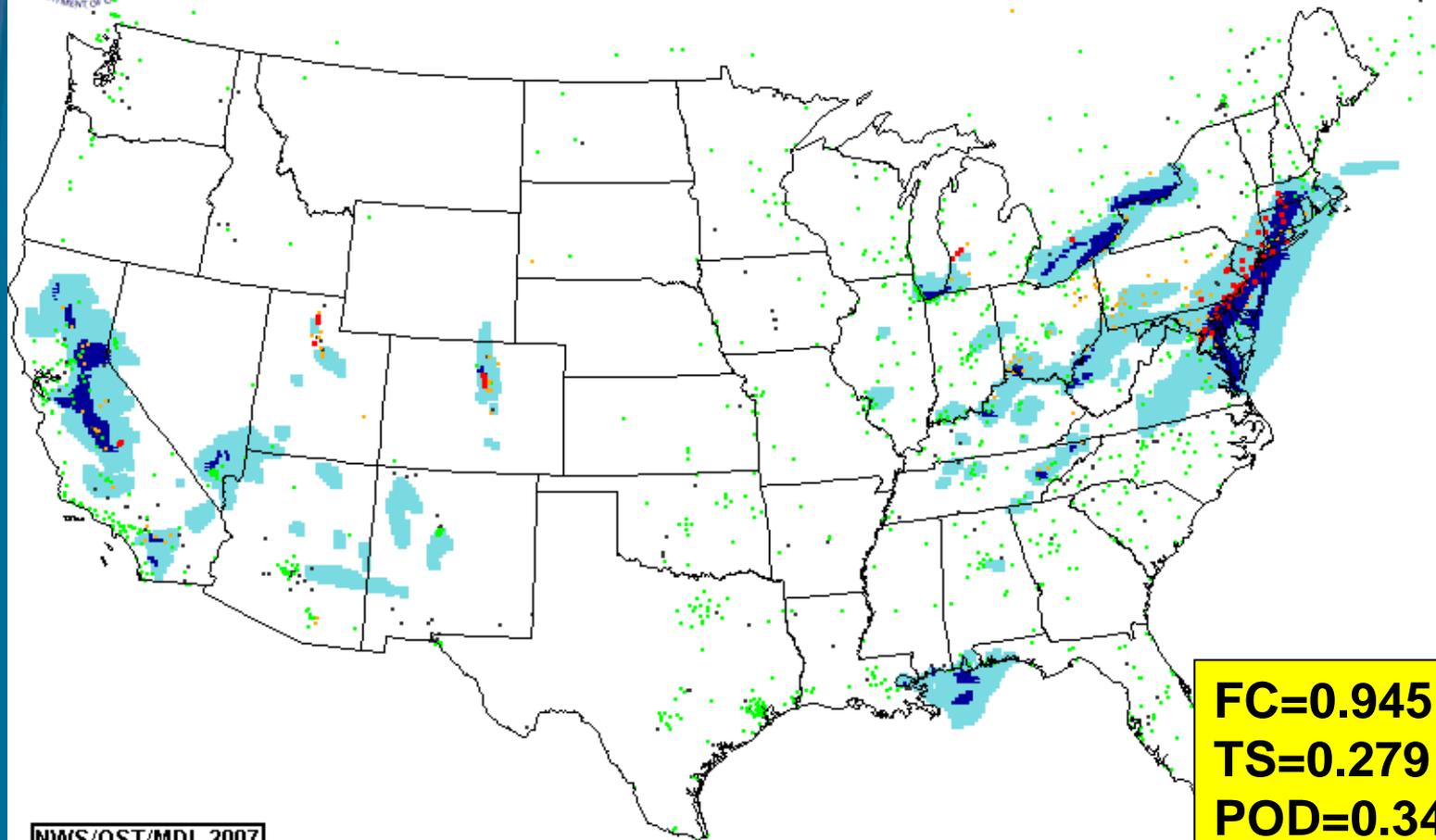


5x, July 9, 2007



24 Hr Ozone Maxima, Obs and Model
Eight Hour Average, Threshold = 85 ppb
Midnight To Midnight EDT 20070709
5X (Experimental) Grid 122

Gray	No Data
Green	Low
Gold/MdBlue	71-84 ppb
Red/DkBlue	Exceedance

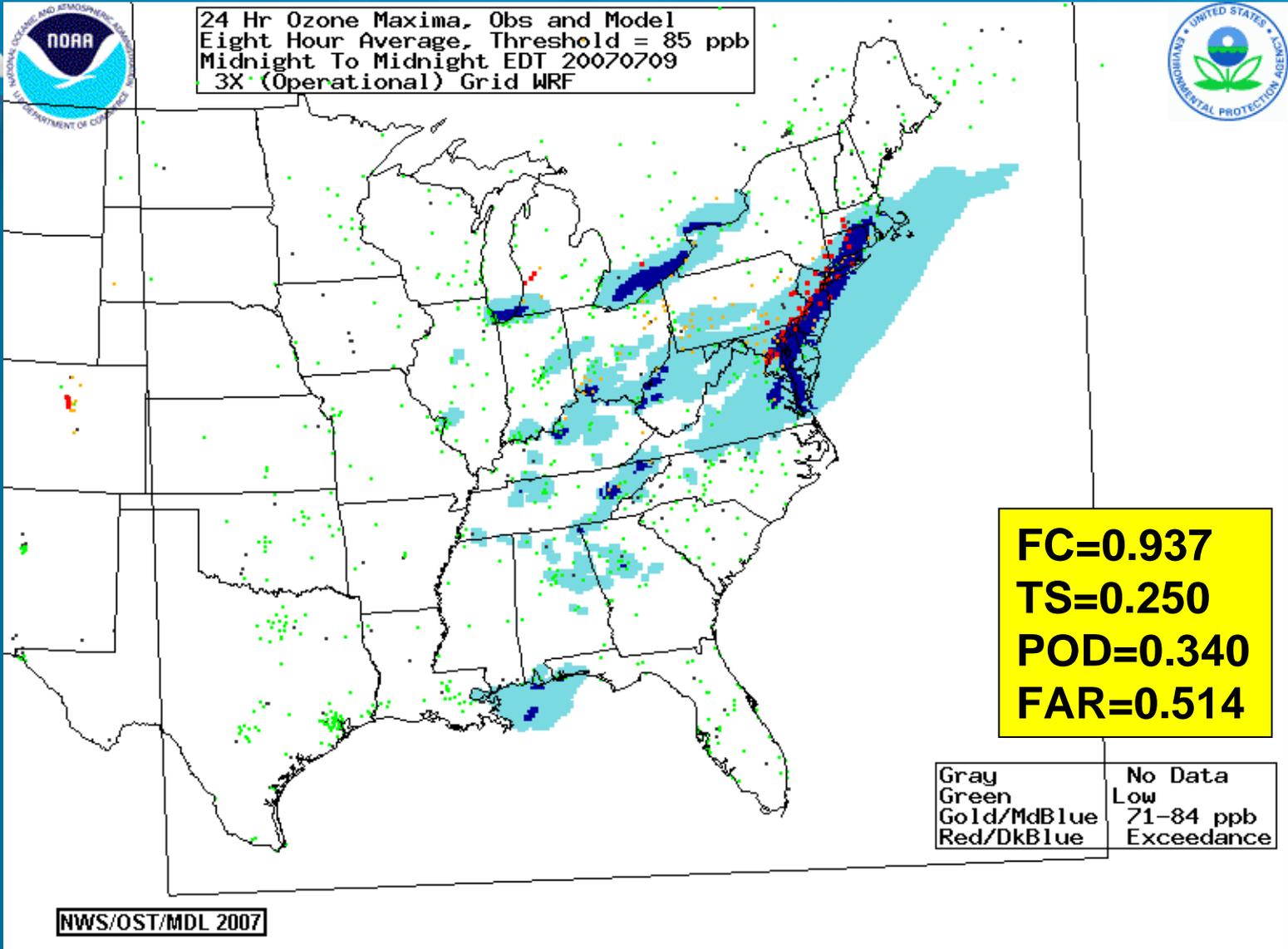


NWS/OST/MDL 2007

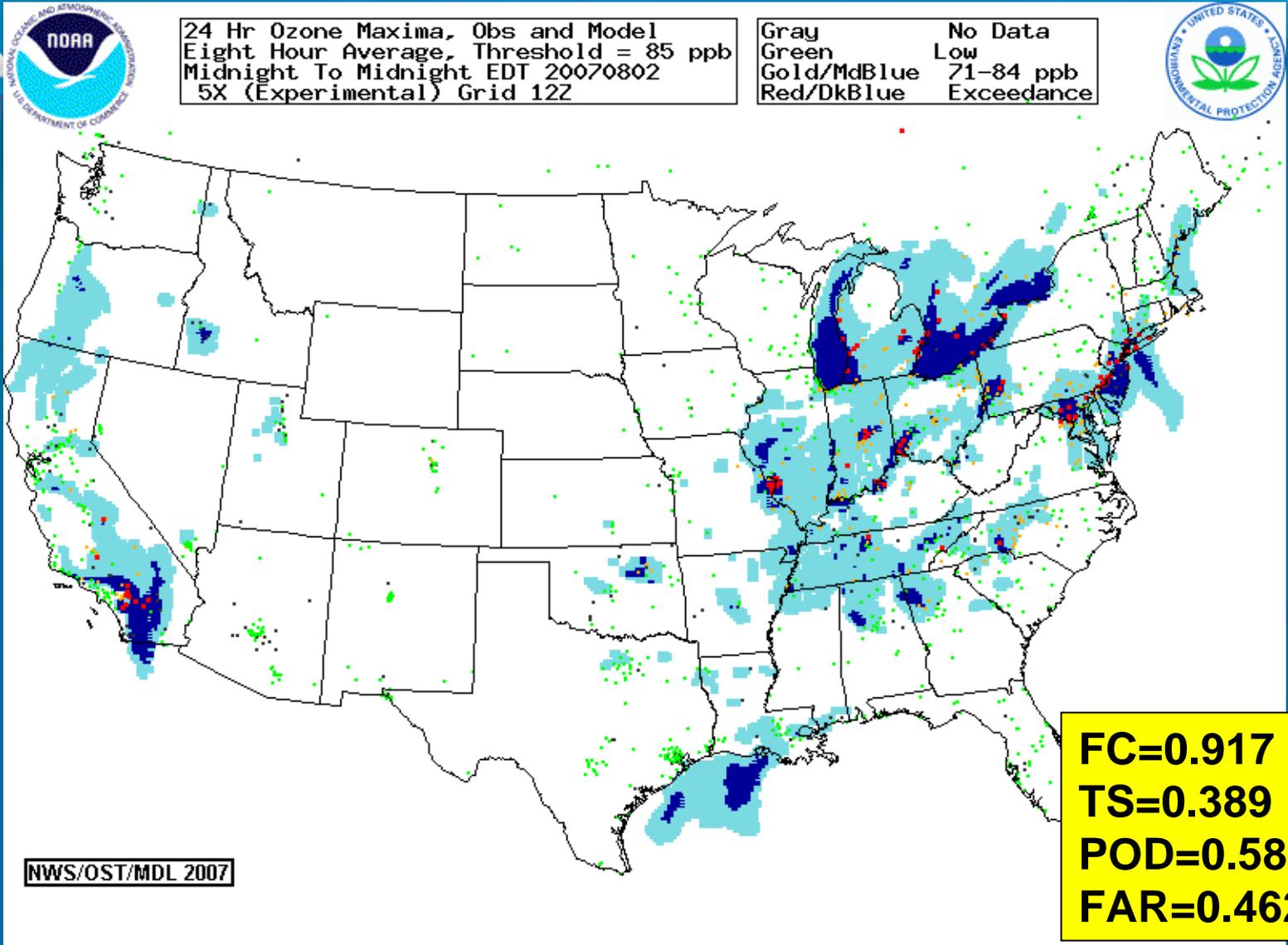
FC=0.945
TS=0.279
POD=0.340
FAR=0.393



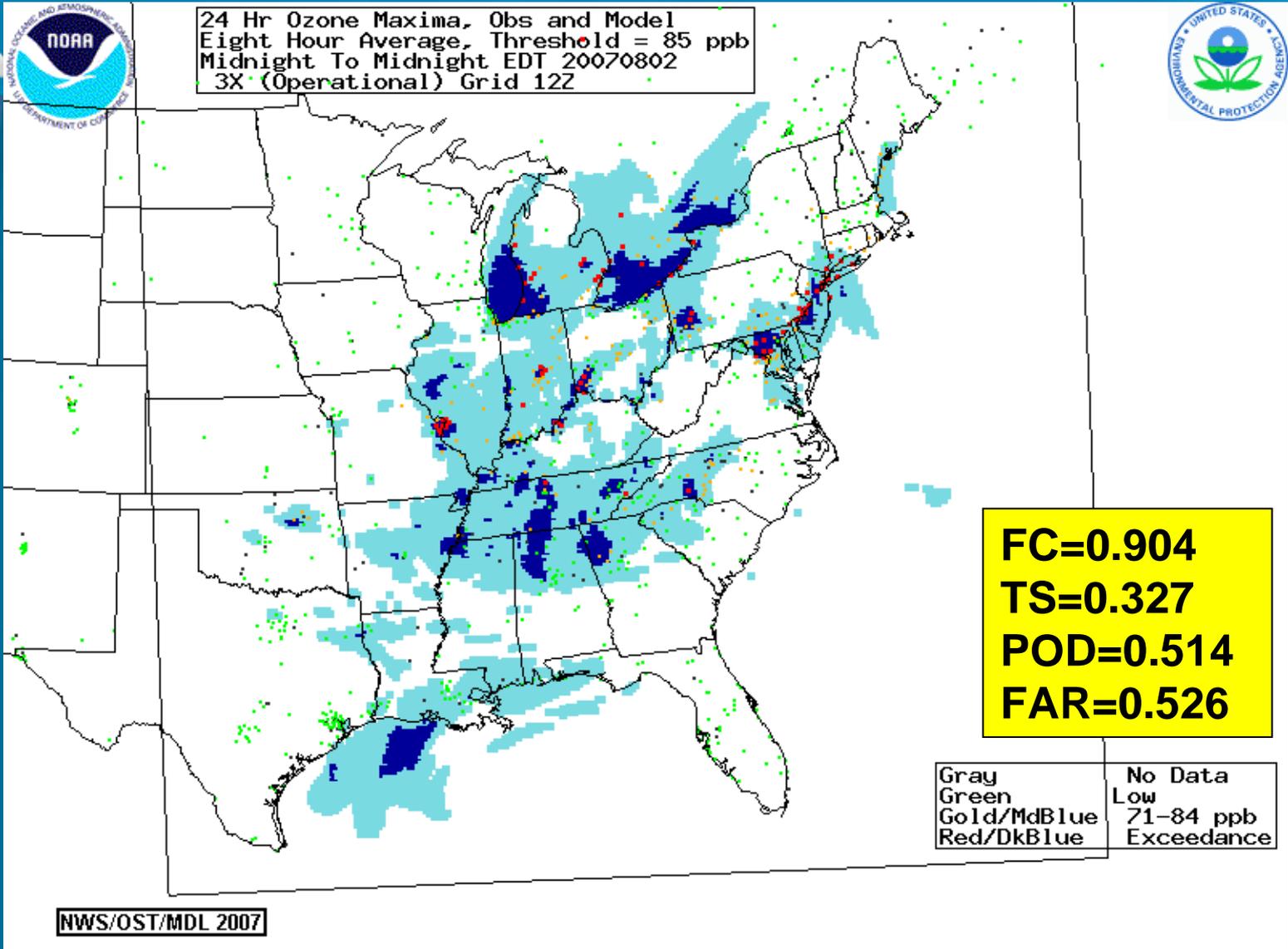
3x, July 9, 2007



5x, August 2, 2007



3x, August 2, 2007

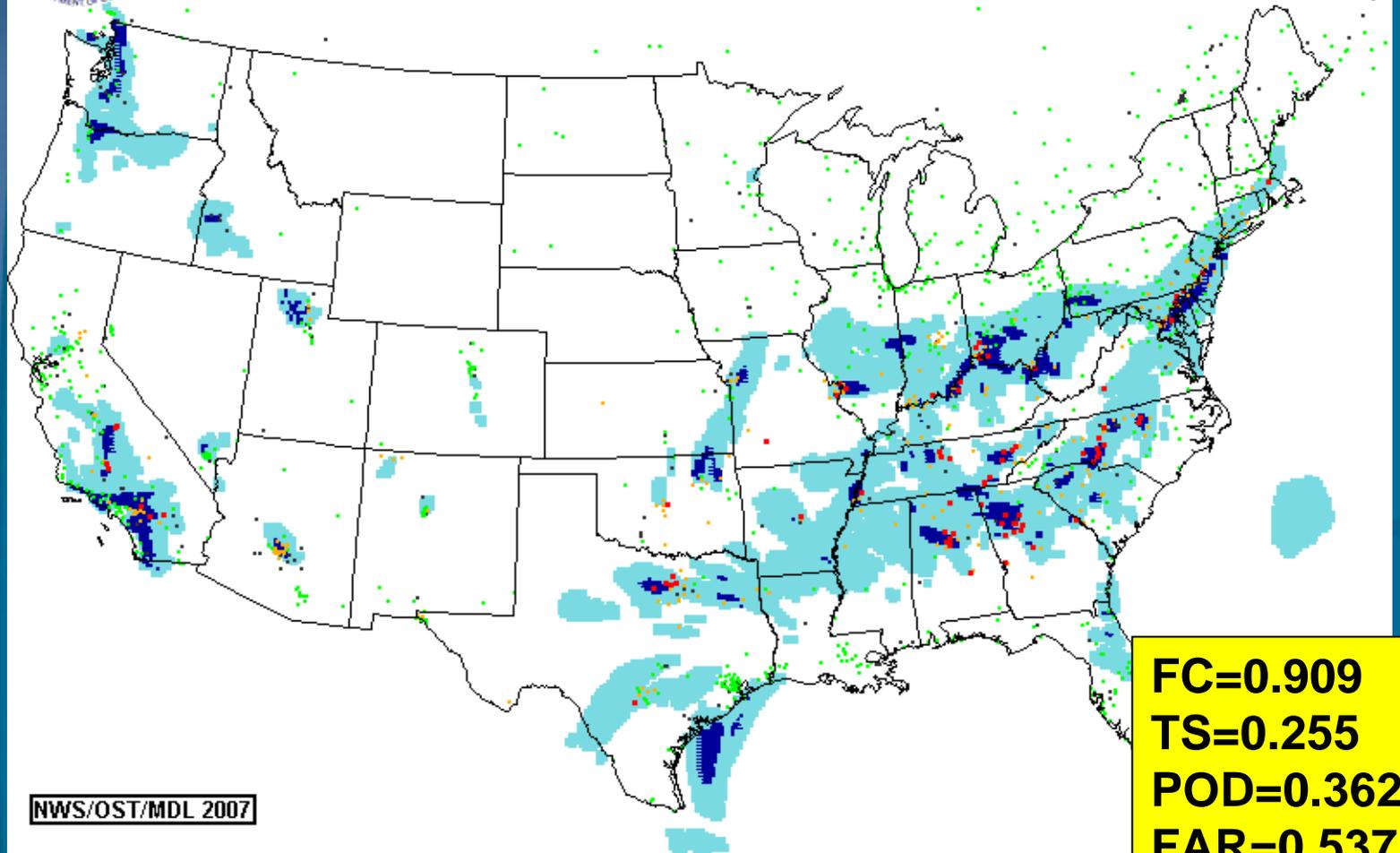


5x, August 15, 2007



24 Hr Ozone Maxima, Obs and Model
Eight Hour Average, Threshold = 85 ppb
Midnight To Midnight EDT 20070815
5X (Experimental) Grid 122

Gray	No Data
Green	Low
Gold/MdBlue	71-84 ppb
Red/DkBlue	Exceedance

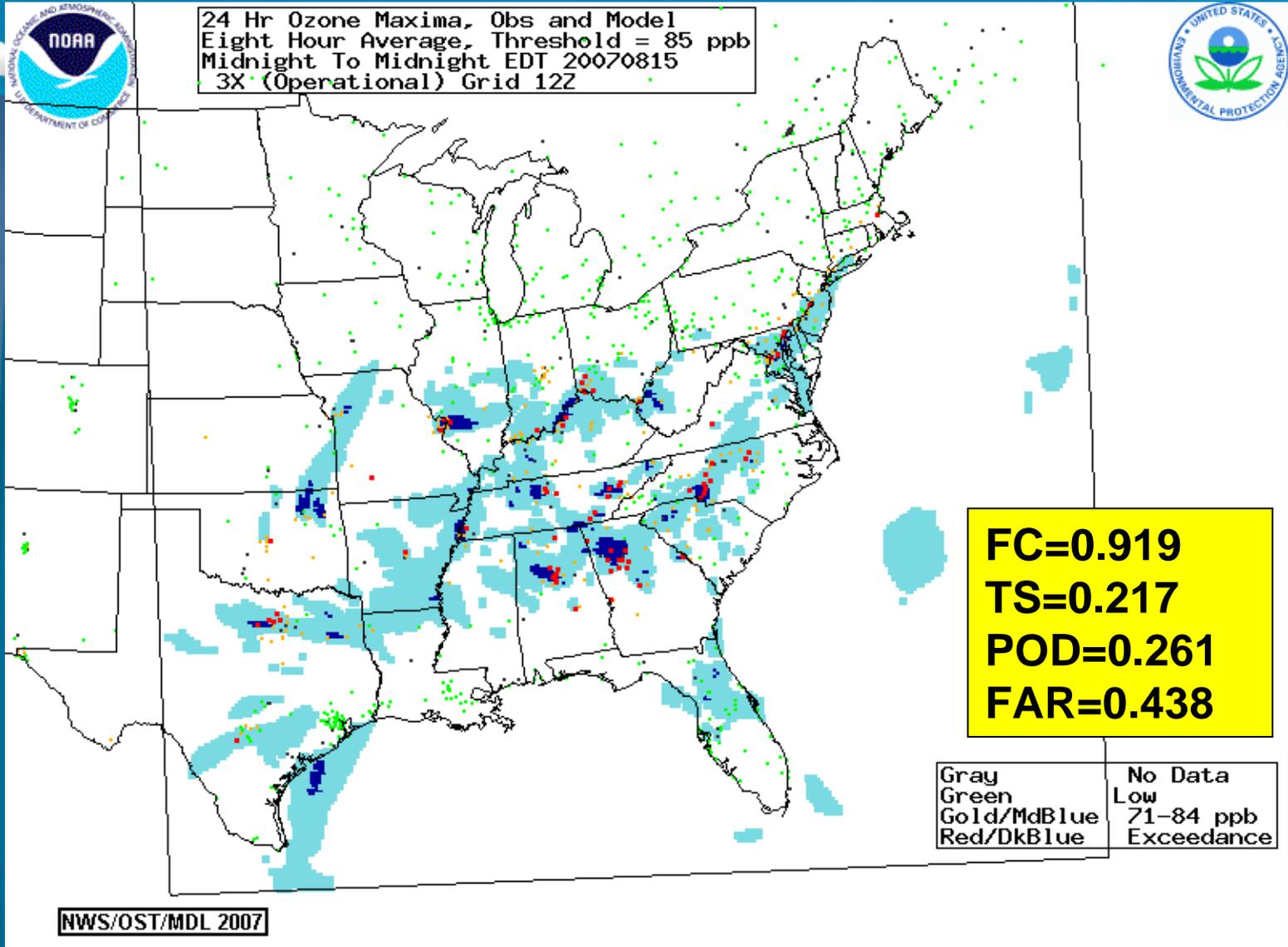


NWS/OST/MDL 2007

FC=0.909
TS=0.255
POD=0.362
FAR=0.537



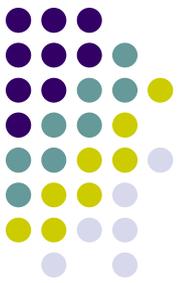
3x, August 15, 2007



Ozone outbreak in California

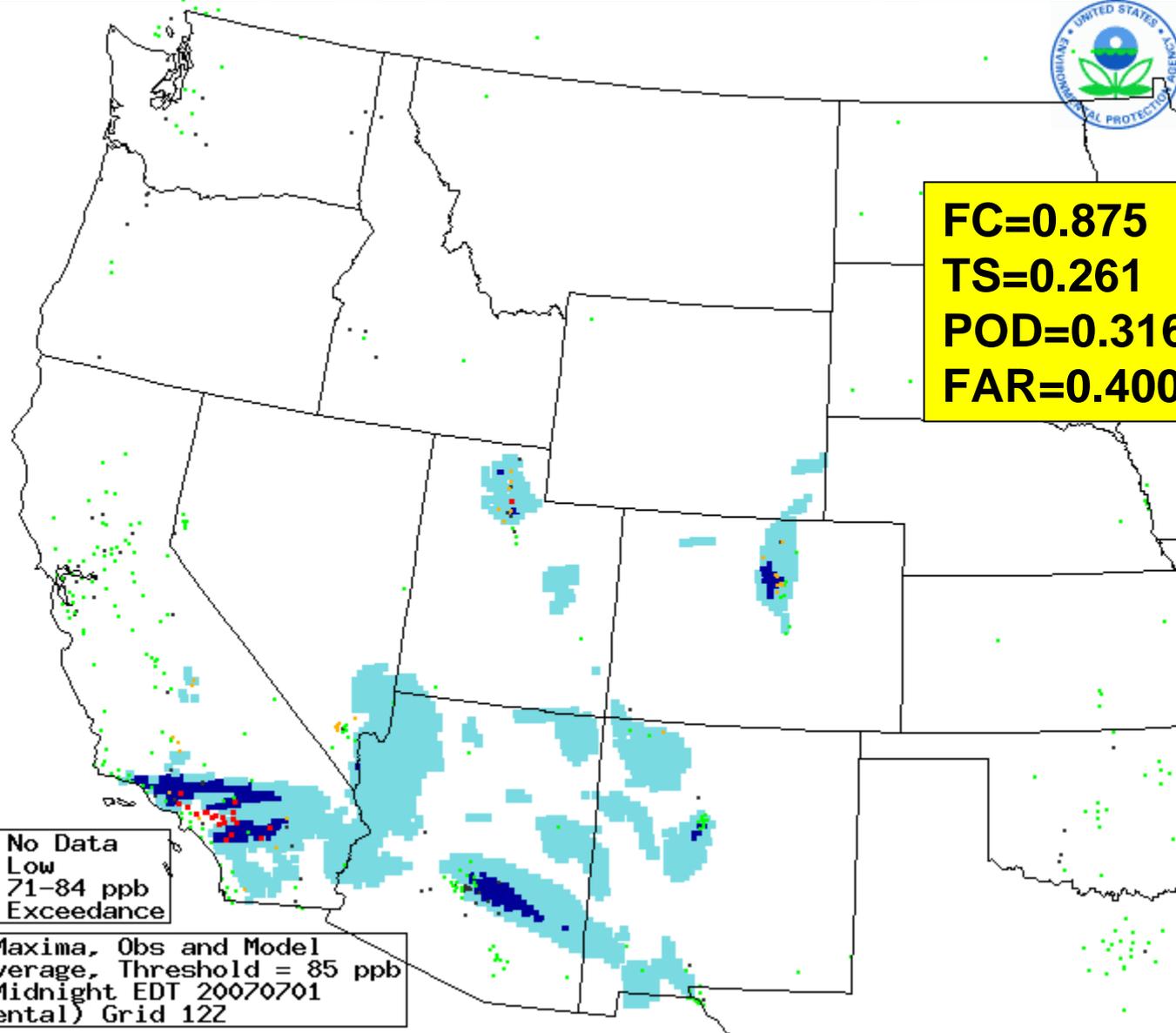
5x performance, 8-h ozone

July 1 – 7, 2007



SCORE	1-Jul	2-Jul	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul
a	6	3	7	23	23	3	1
b	4	3	11	36	24	7	1
c	13	13	8	10	14	22	15
d	113	115	99	66	69	98	113
FC	0.875	0.881	0.848	0.659	0.708	0.777	0.877
TS	0.261	0.158	0.269	0.333	0.377	0.094	0.059
POD	0.316	0.188	0.467	0.697	0.622	0.120	0.062
FAR	0.400	0.500	0.611	0.610	0.511	0.700	0.500

5x, July 1, 2007



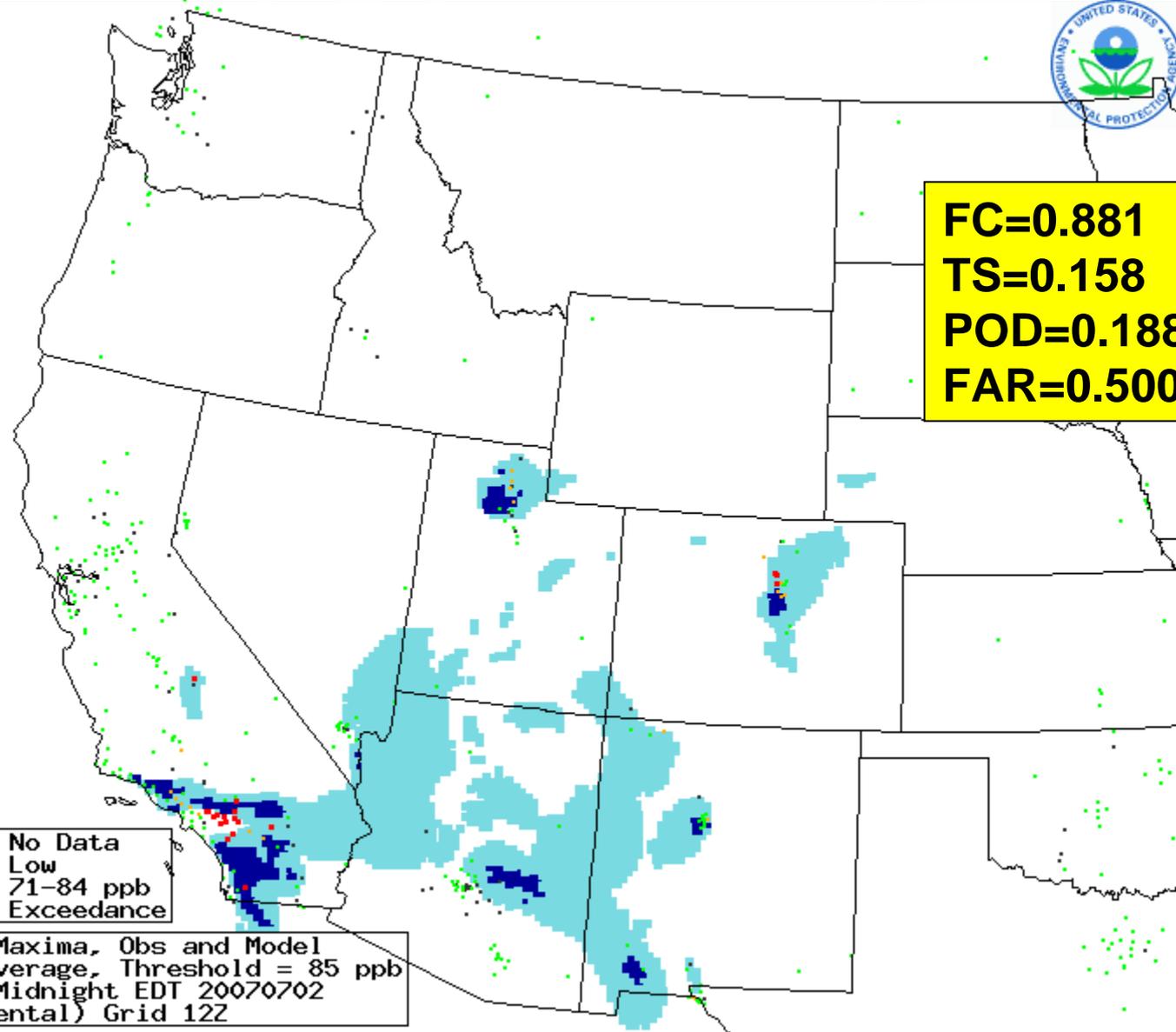
FC=0.875
TS=0.261
POD=0.316
FAR=0.400

Gray	No Data
Green	Low
Gold/MdBlue	71-84 ppb
Red/DkBlue	Exceedance

Daily Ozone Maxima, Obs and Model
Eight Hour Average, Threshold = 85 ppb
Midnight To Midnight EDT 20070701
5X (Experimental) Grid 122



5x, July 2, 2007



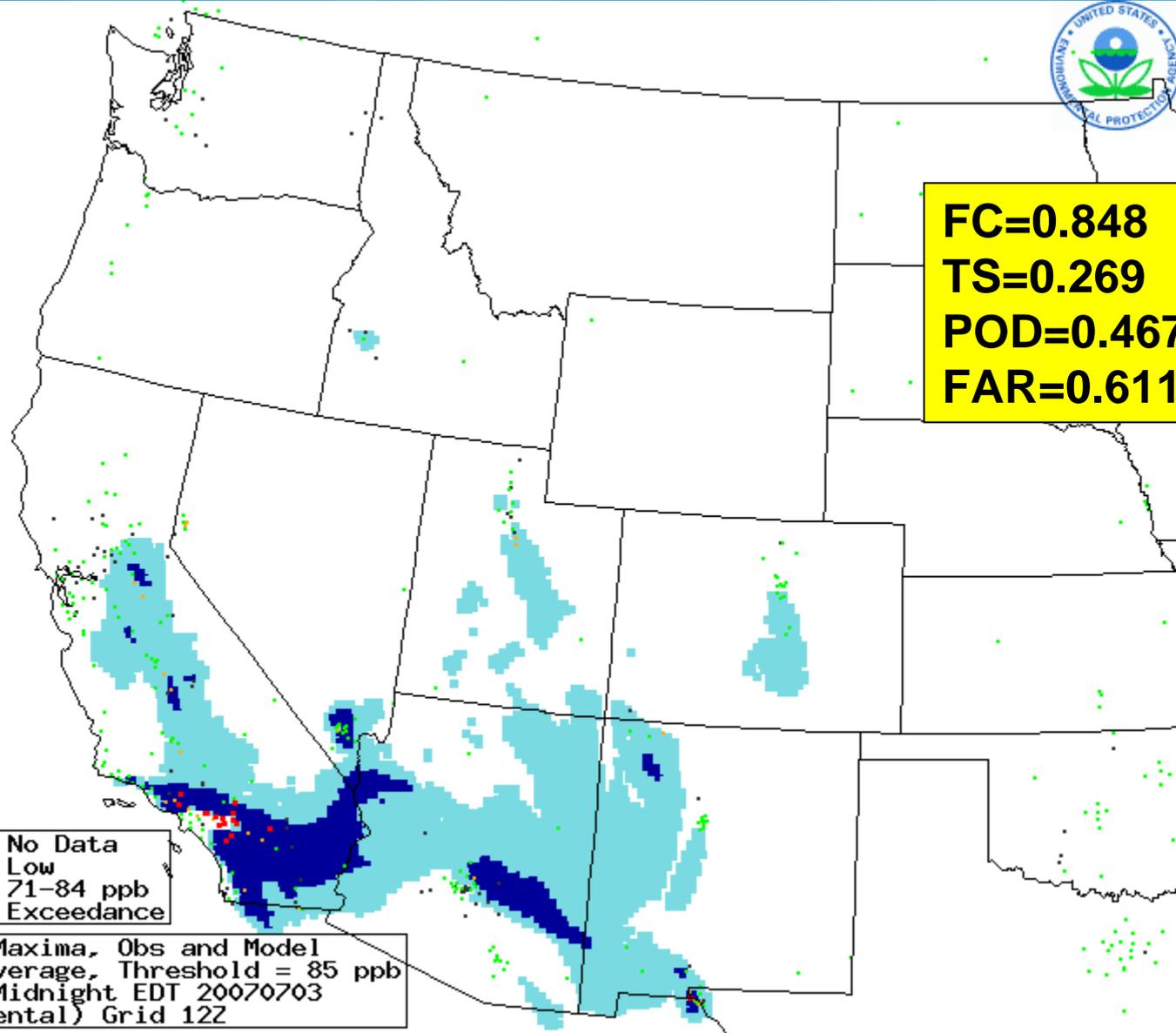
FC=0.881
TS=0.158
POD=0.188
FAR=0.500

Gray	No Data
Green	Low
Gold/MdBlue	71-84 ppb
Red/DkBlue	Exceedance

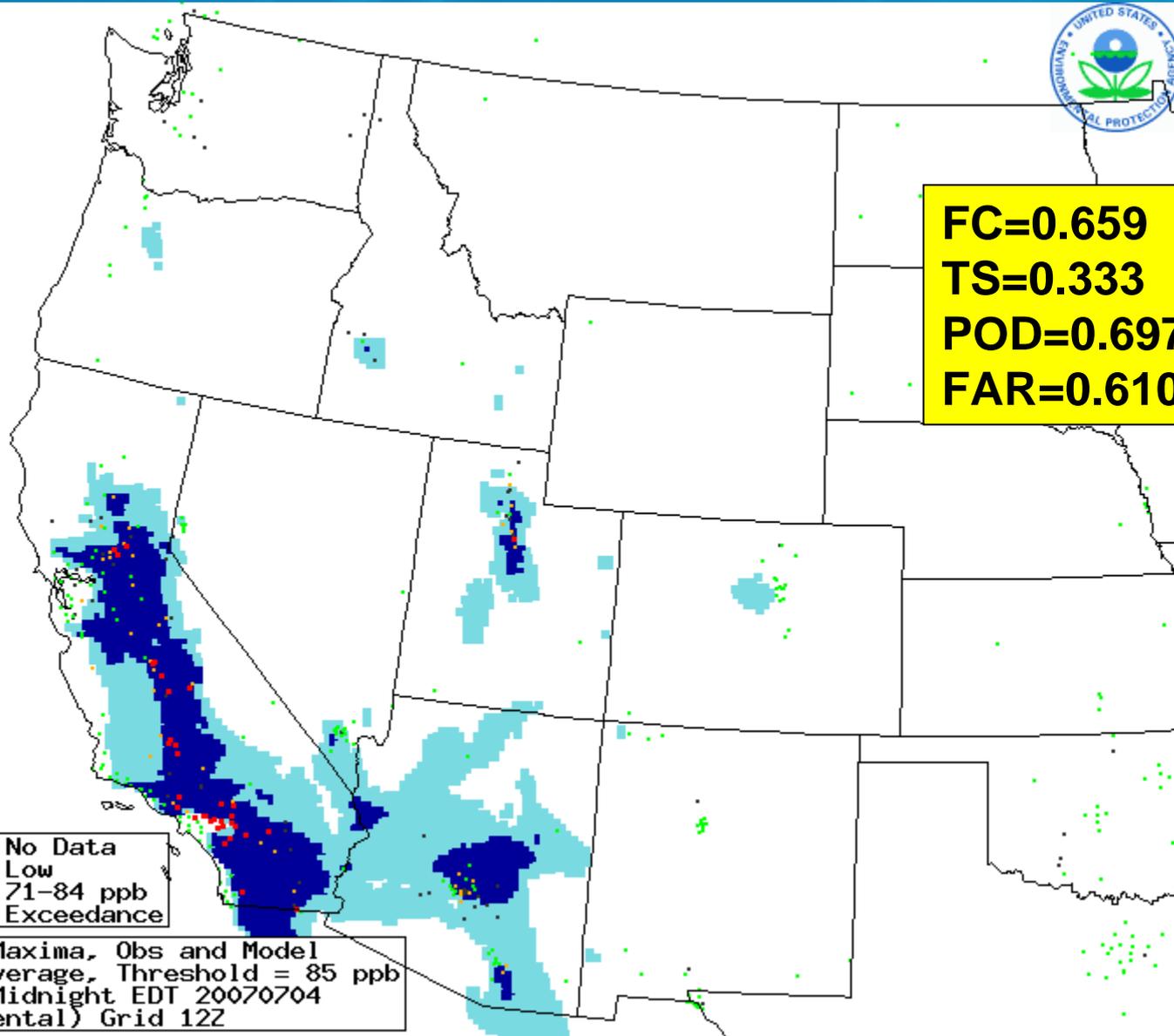
Daily Ozone Maxima, Obs and Model
Eight Hour Average, Threshold = 85 ppb
Midnight To Midnight EDT 20070702
5X (Experimental) Grid 122



5x, July 3, 2007



5x, July 4, 2007



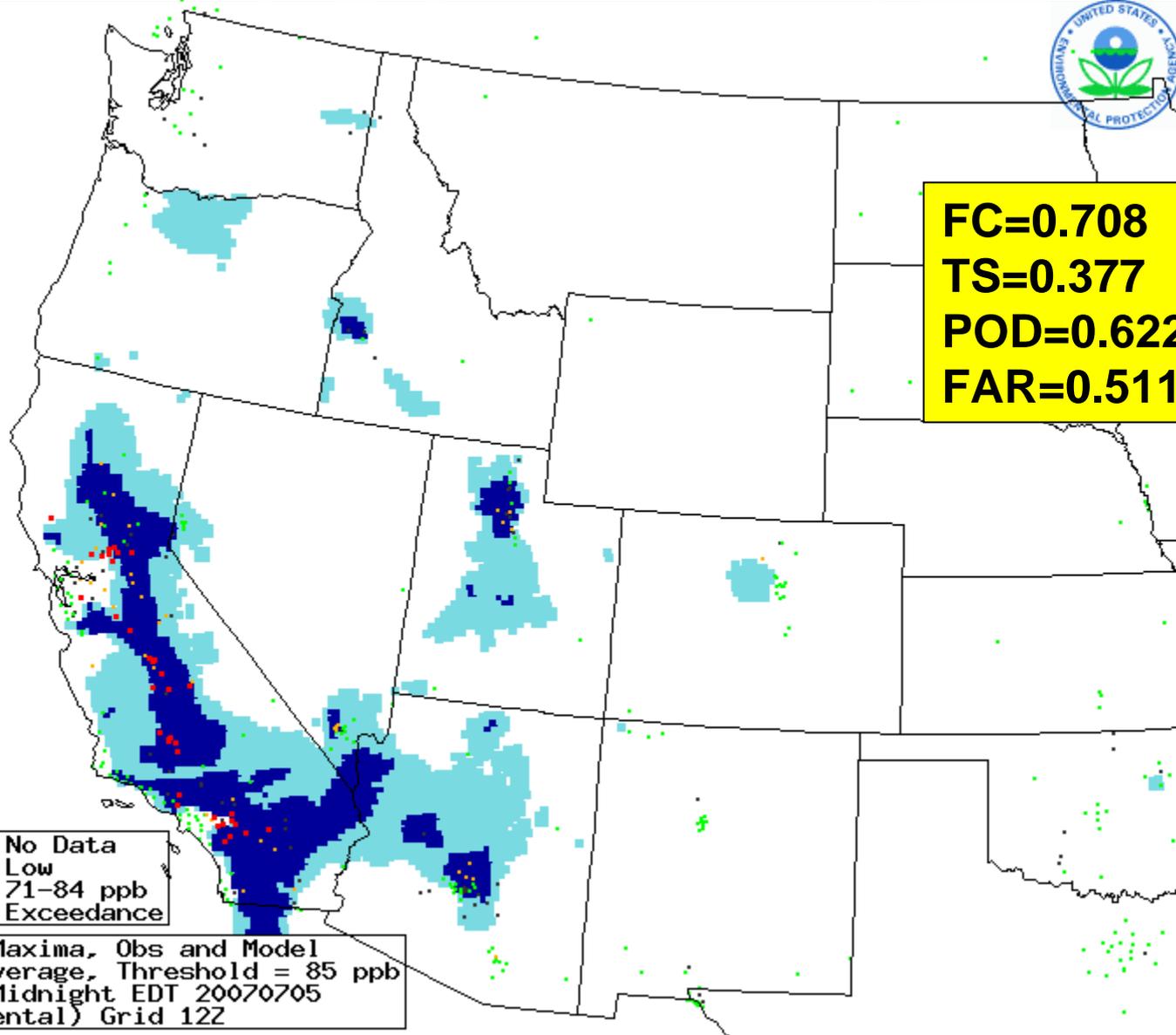
FC=0.659
TS=0.333
POD=0.697
FAR=0.610

Gray	No Data
Green	Low
Gold/MdBlue	71-84 ppb
Red/DkBlue	Exceedance

Daily Ozone Maxima, Obs and Model
Eight Hour Average, Threshold = 85 ppb
Midnight To Midnight EDT 20070704
5X (Experimental) Grid 122



5x, July 5, 2007



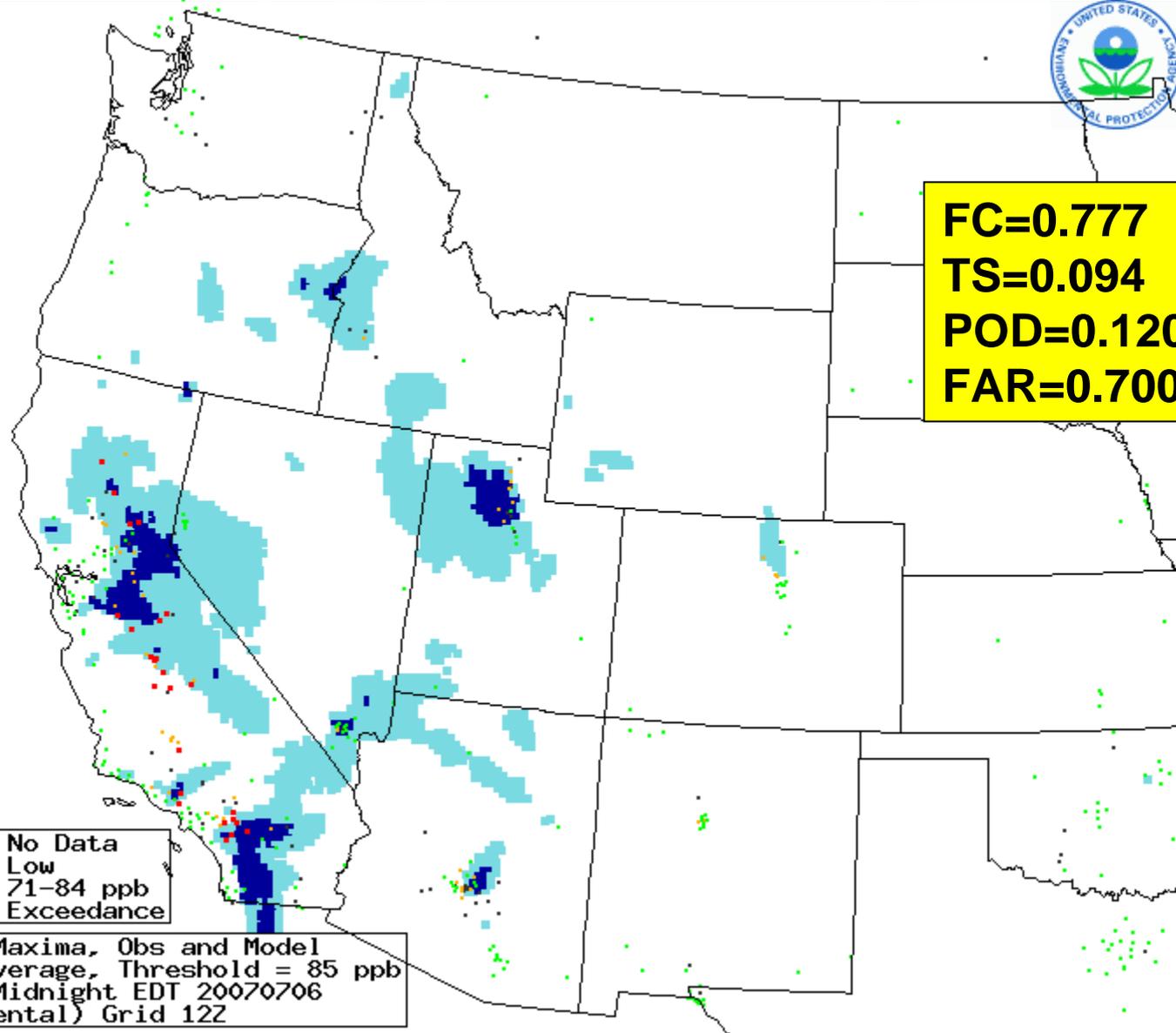
FC=0.708
TS=0.377
POD=0.622
FAR=0.511

Gray	No Data
Green	Low
Gold/MdBlue	71-84 ppb
Red/DkBlue	Exceedance

Daily Ozone Maxima, Obs and Model
Eight Hour Average, Threshold = 85 ppb
Midnight To Midnight EDT 20070705
5X (Experimental) Grid 122



5x, July 6, 2007

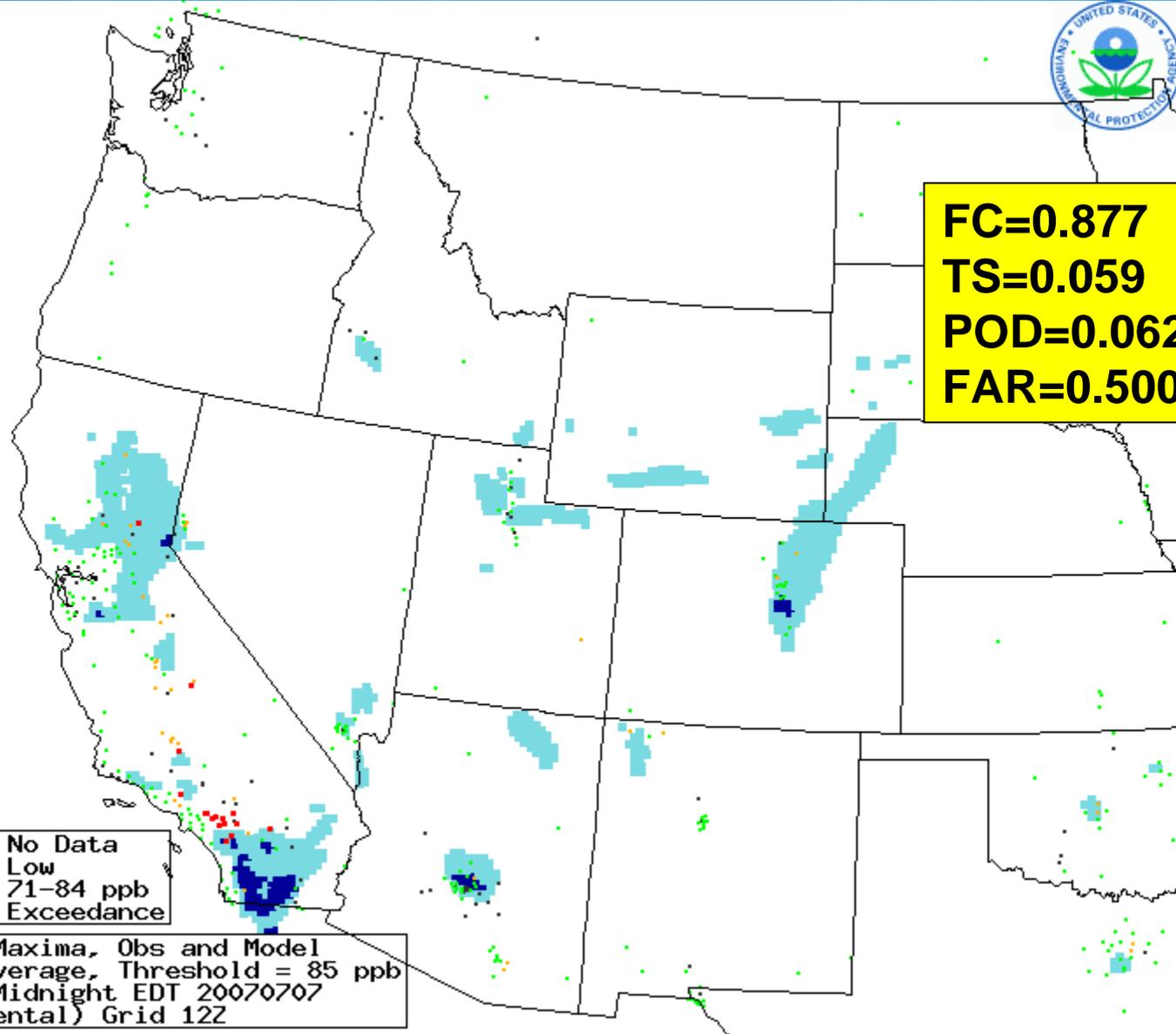


Gray	No Data
Green	Low
Gold/MdBlue	71-84 ppb
Red/DkBlue	Exceedance

Daily Ozone Maxima, Obs and Model
Eight Hour Average, Threshold = 85 ppb
Midnight To Midnight EDT 20070706
5X (Experimental) Grid 122



5x, July 7, 2007



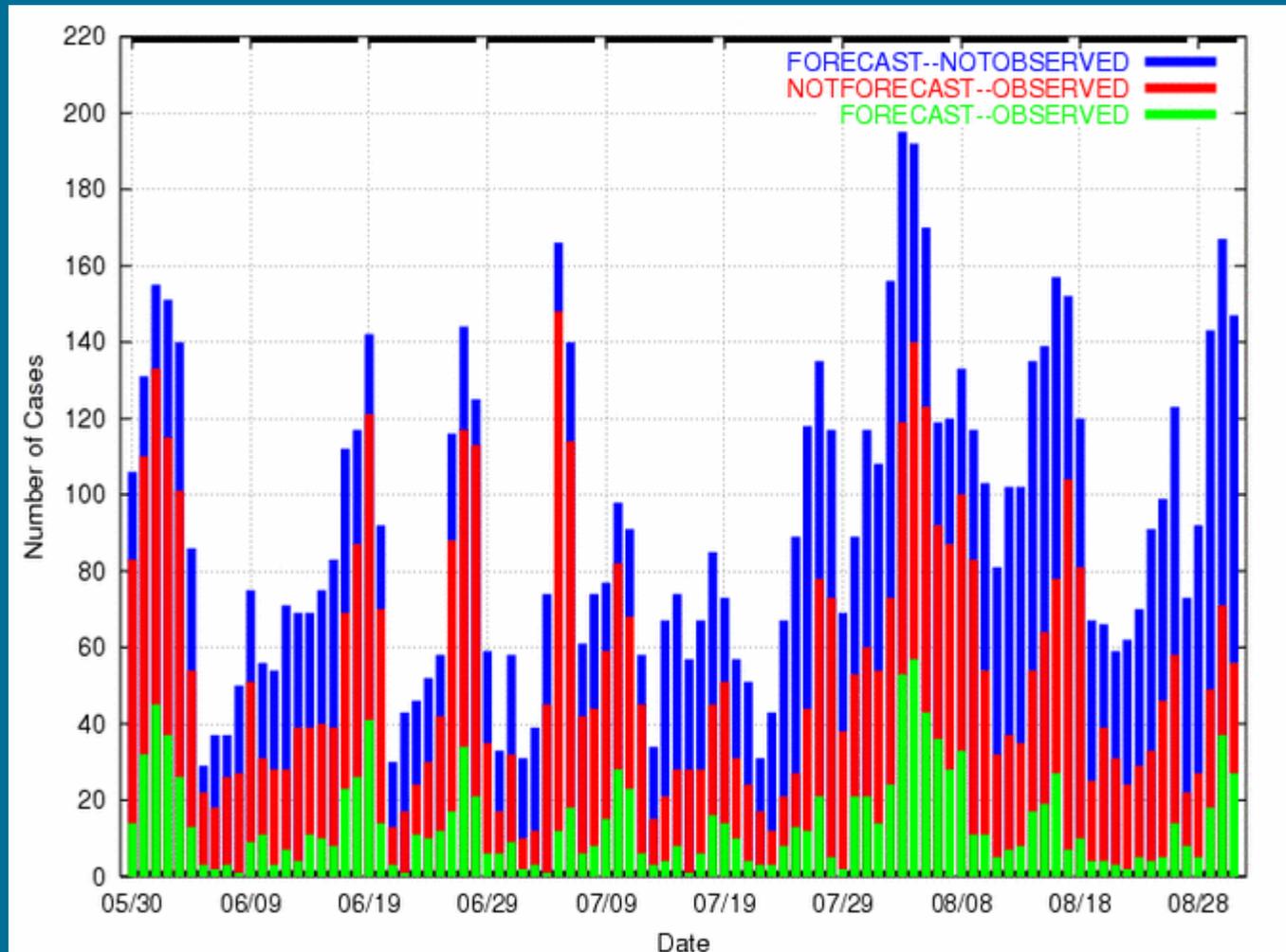
FC=0.877
TS=0.059
POD=0.062
FAR=0.500

Gray	No Data
Green	Low
Gold/MdBlue	71-84 ppb
Red/DkBlue	Exceedance

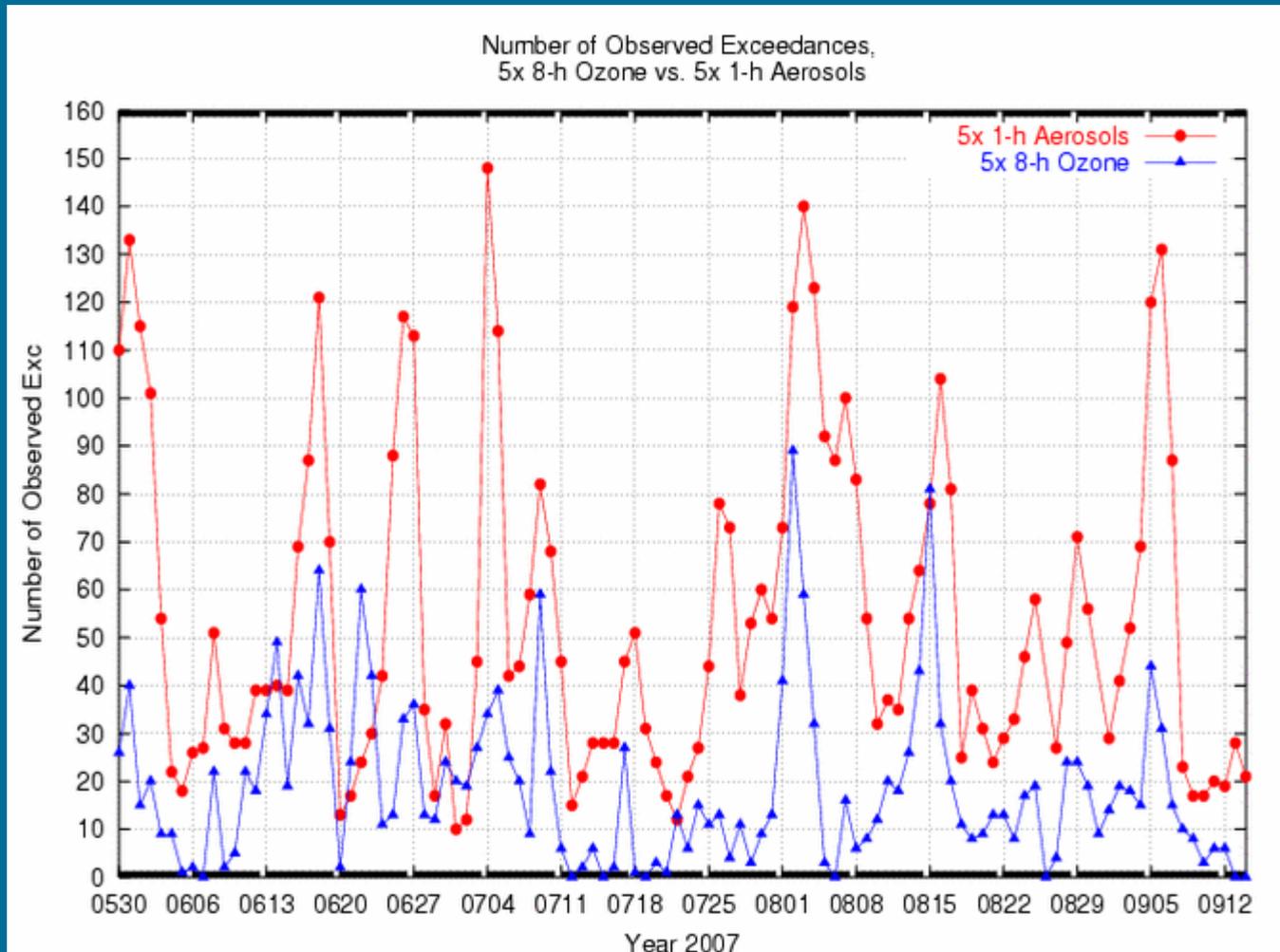
Daily Ozone Maxima, Obs and Model
Eight Hour Average, Threshold = 85 ppb
Midnight To Midnight EDT 20070707
5X (Experimental) Grid 122



Aerosols: 5x, daily max of 1-h avg June – August, 2007, 0600 UTC



1-h Aerosols vs. 8-h ozone 5x observed exc, Summer 2007 more exceedances for aerosols



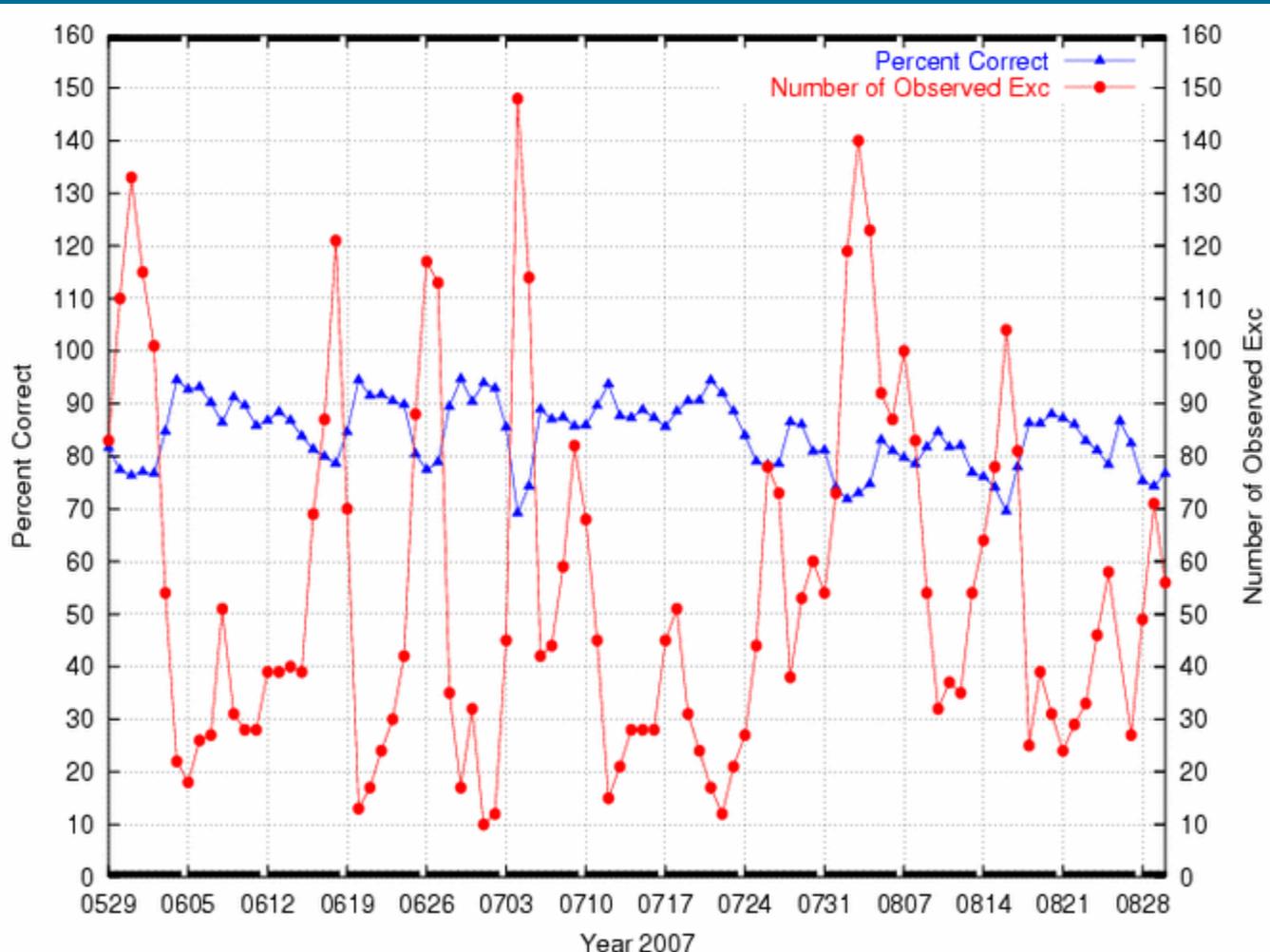
Contingency Table Results

Aerosols, 1-h average

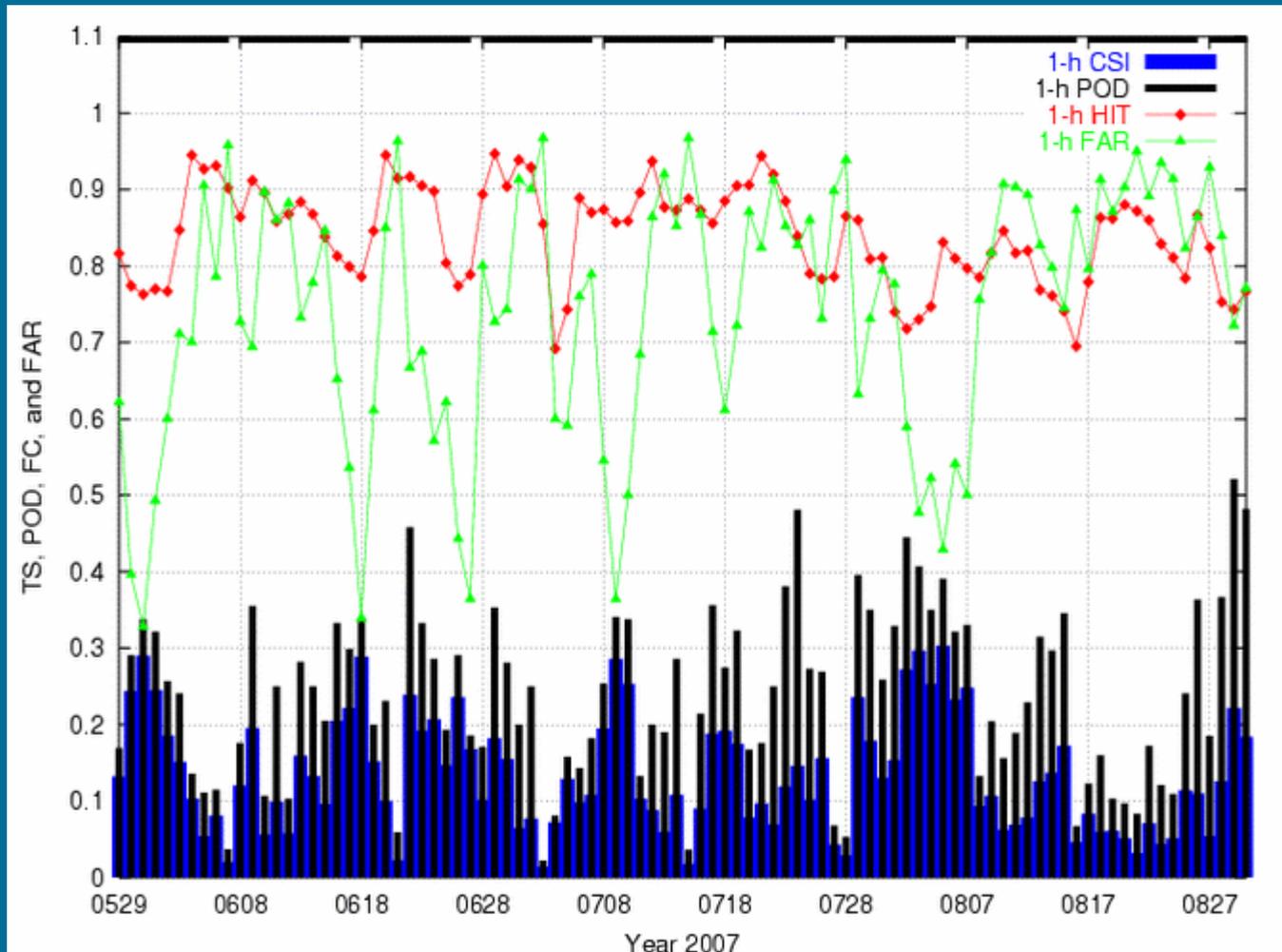
2007, 5x CONUS

SCORE	March	April	May	June	July	August
a	247	79	147	347	309	524
b	542	358	431	761	1019	1786
c	862	469	701	1081	1098	1318
d	12430	13006	8575	12285	12547	11264
PC	0.900	0.941	0.885	0.873	0.859	0.797
TS	0.150	0.087	0.115	0.159	0.127	0.149
POD	0.223	0.144	0.173	0.243	0.220	0.284
FAR	0.687	0.819	0.746	0.687	0.767	0.763

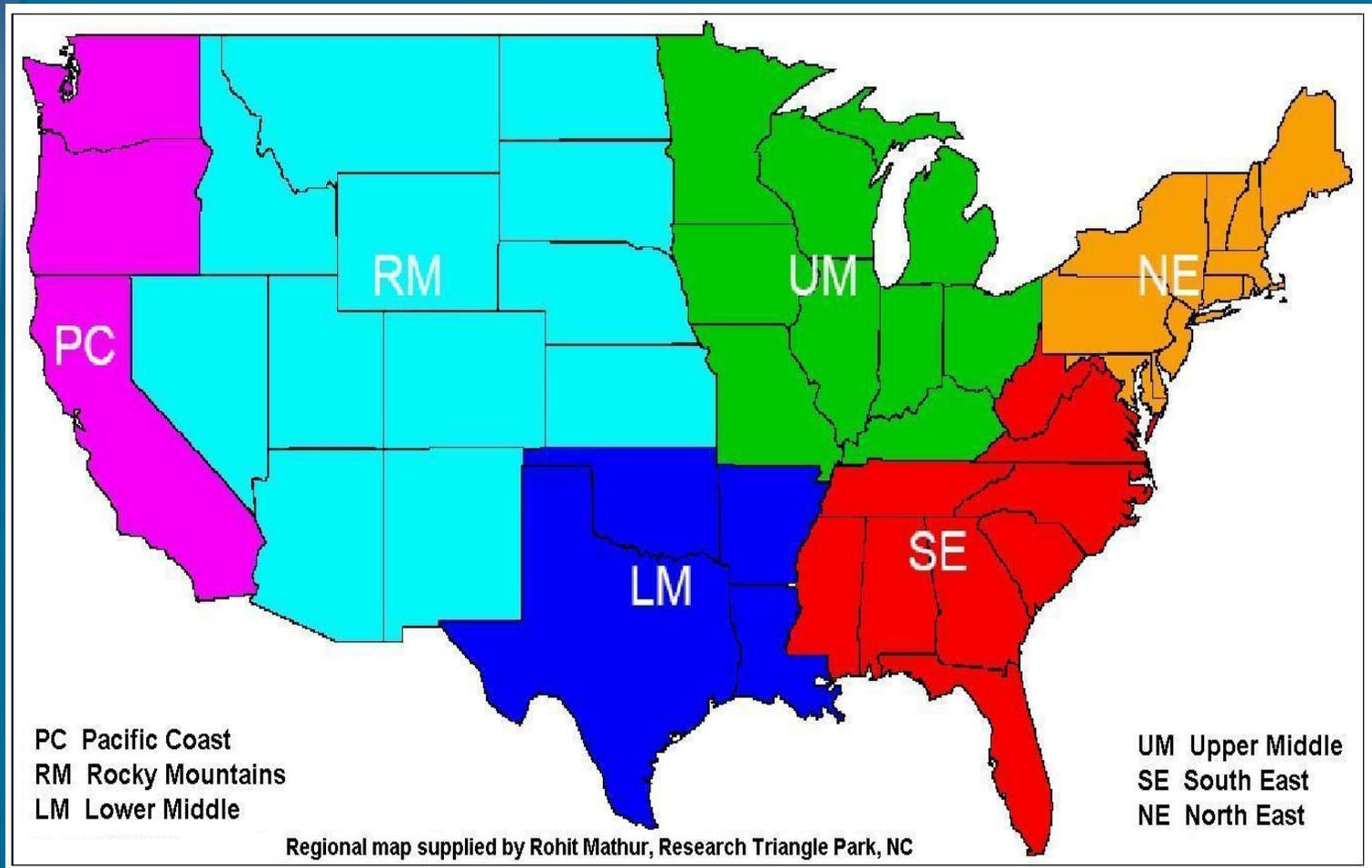
Daily maximum of 1-h avg percent correct decreased as aerosol activity increased



The whole she-bang 1-h aerosol predictions, 2007

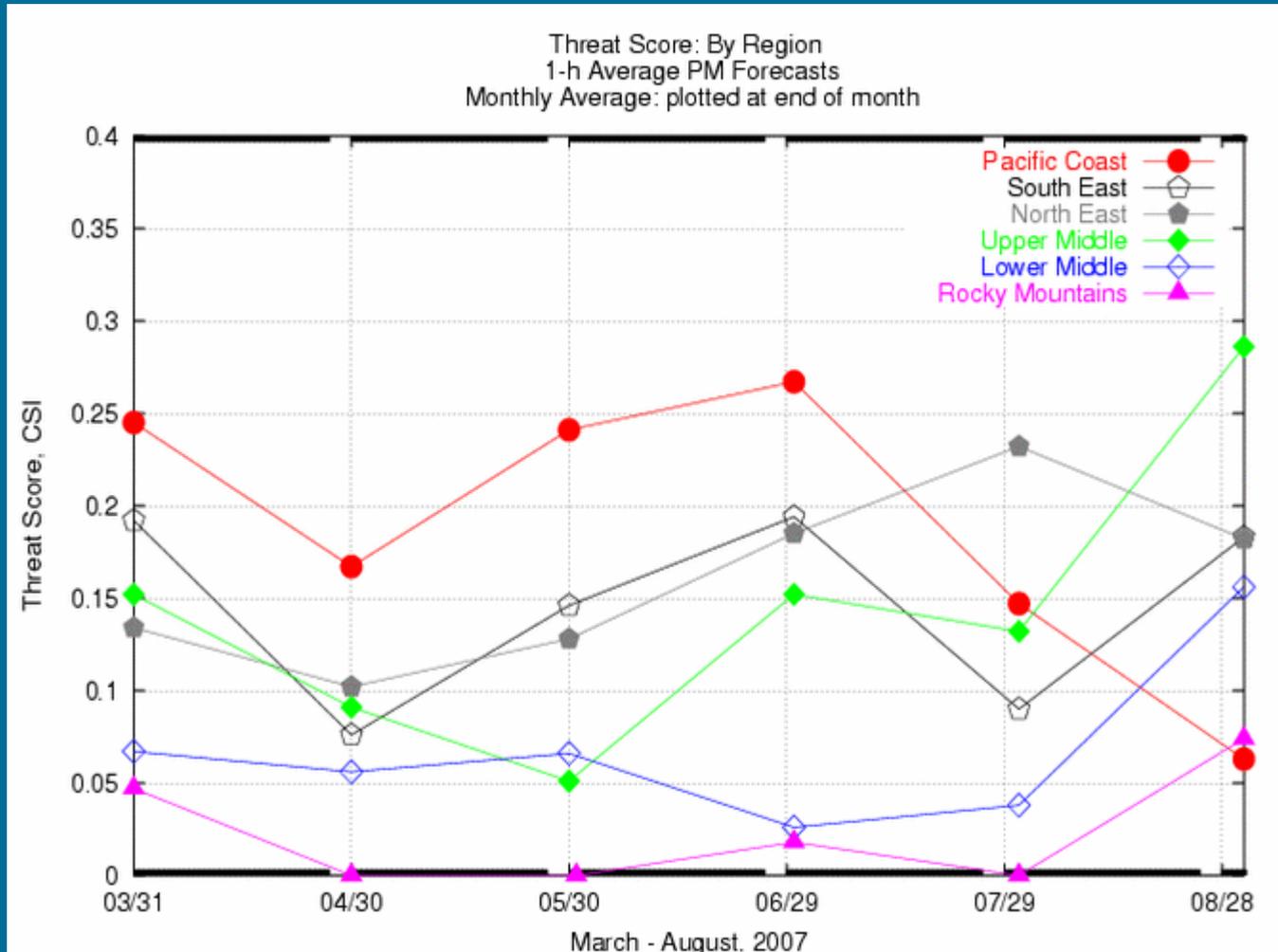


Aerosols: six regions

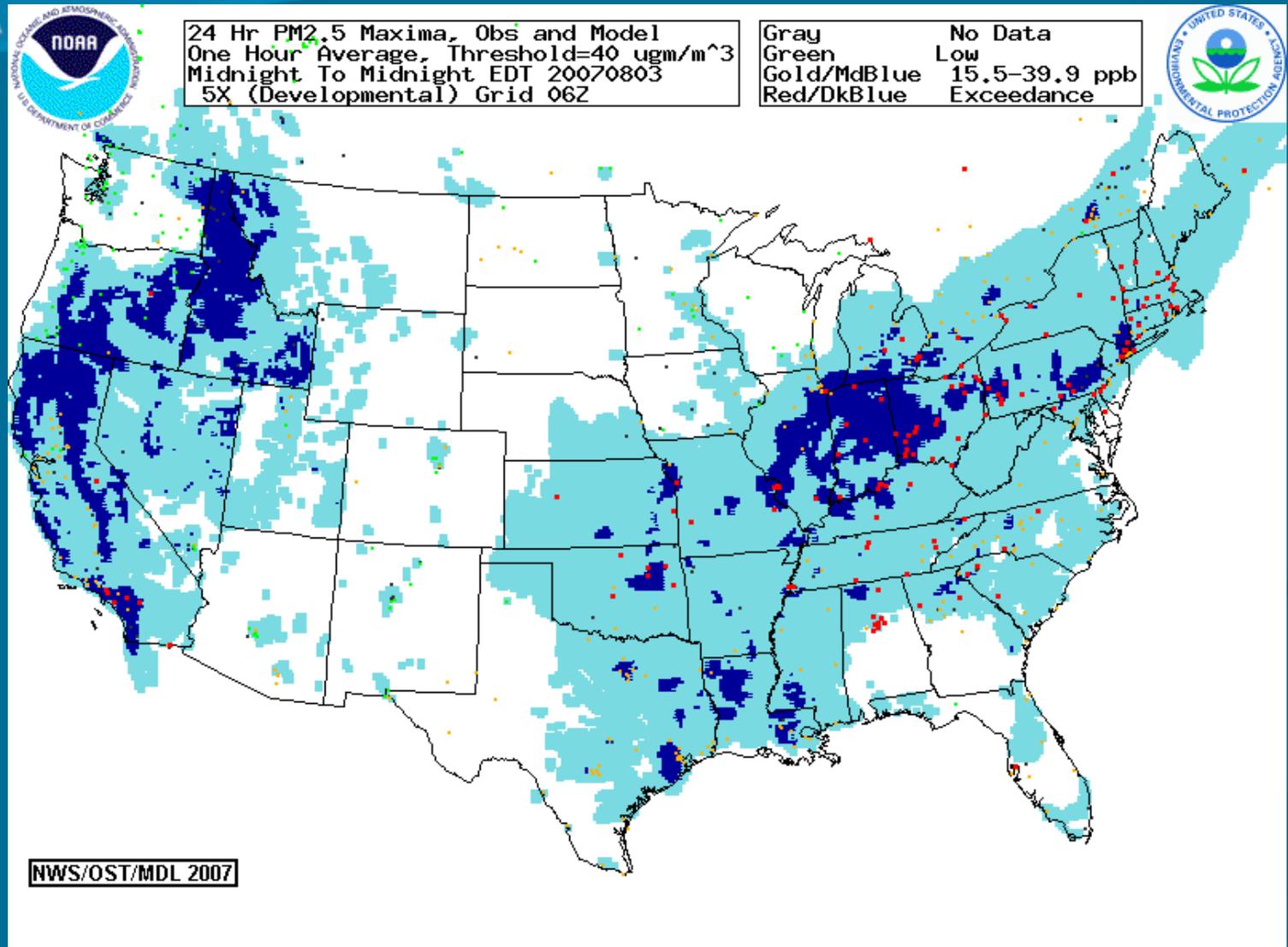


1-h Threat Score, by region March – August, 2007

Pacific Coast TS dropped in Aug

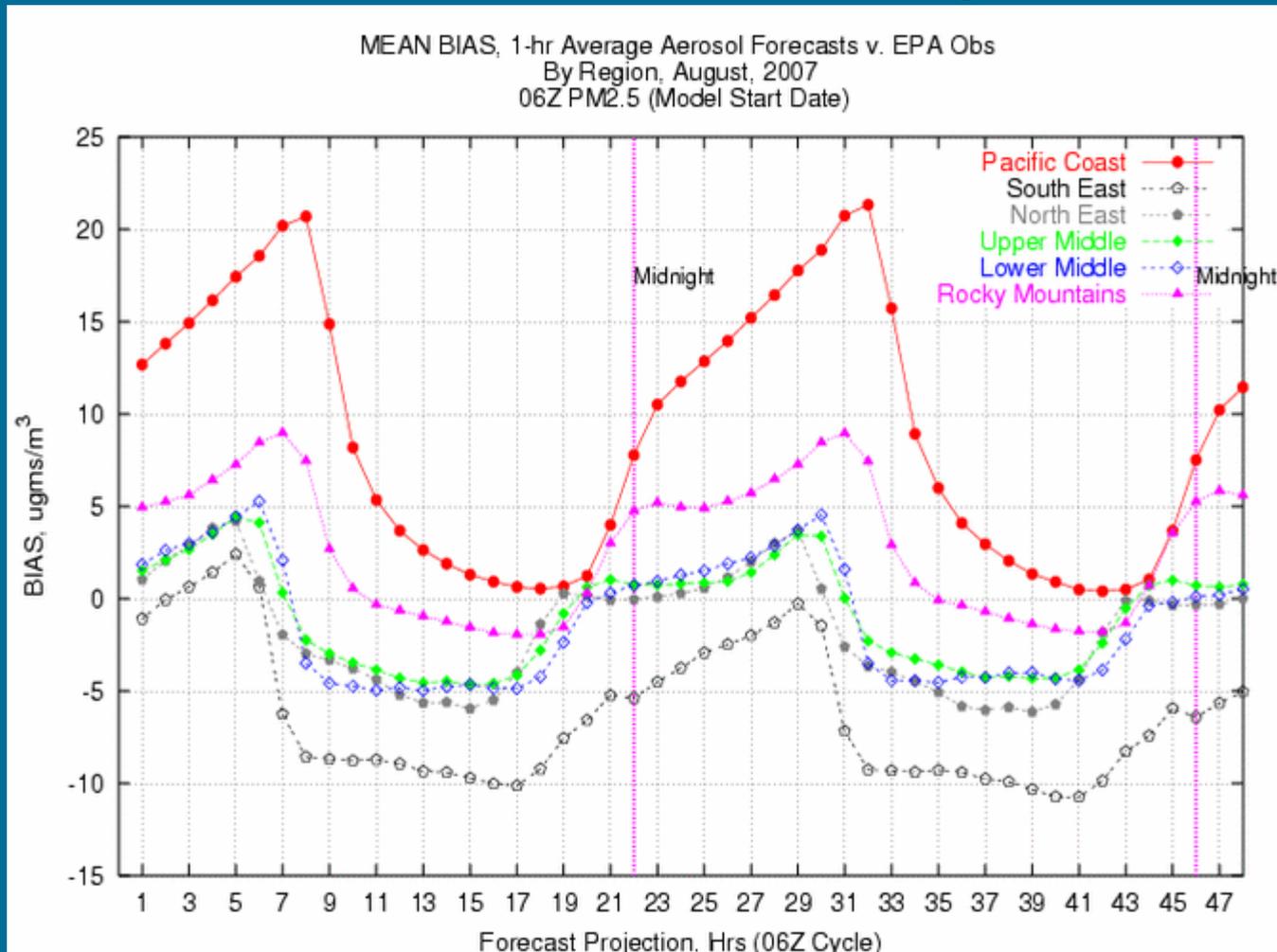


Daily max, 1-h avg, August 3, 2007 over-forecasting in the West



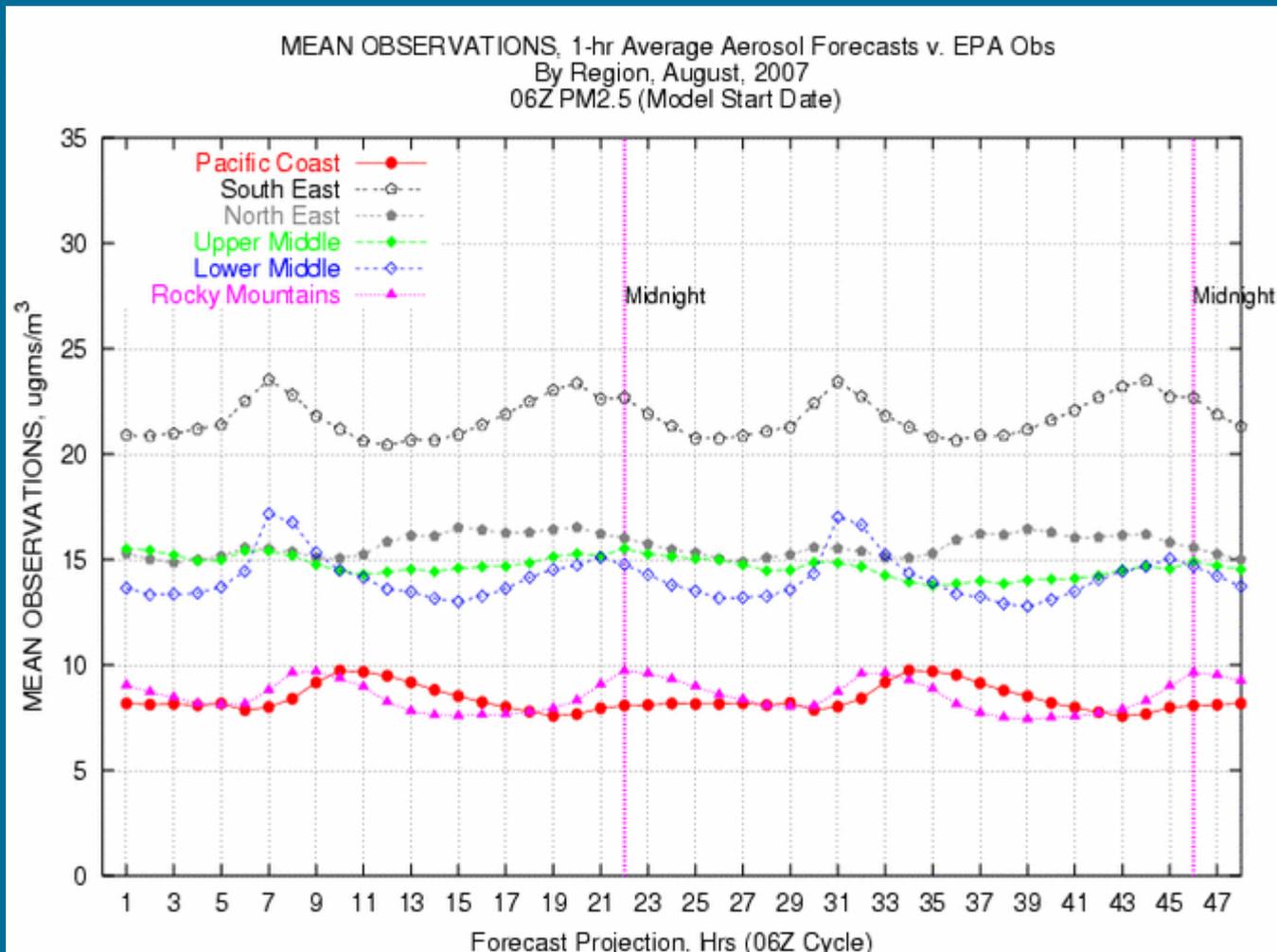
Aerosols, mean bias, by region August, 2007

Pacific Coast shows high bias



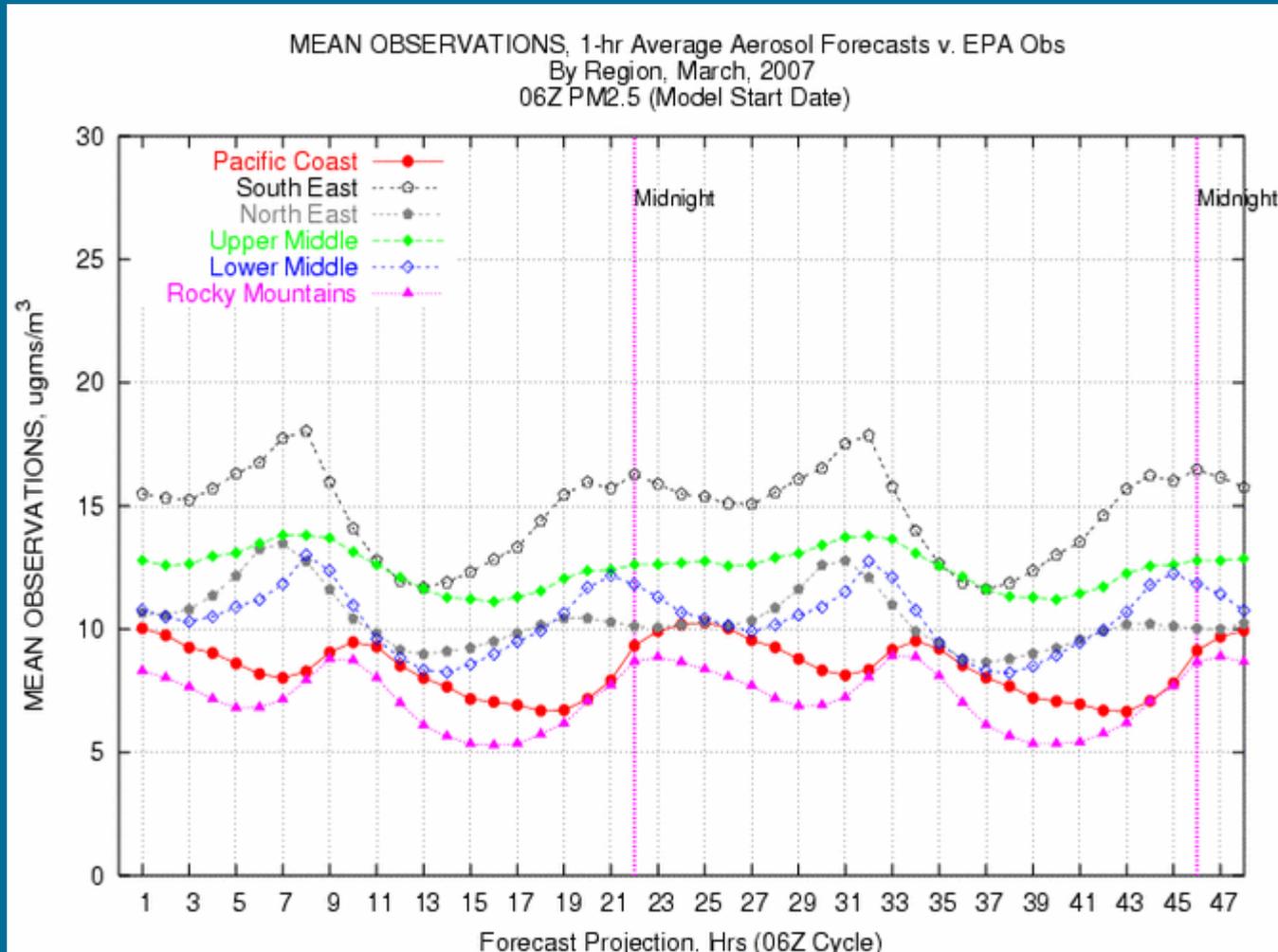
Aerosols, mean observations by region, August, 2007

PC and RM show lowest mean

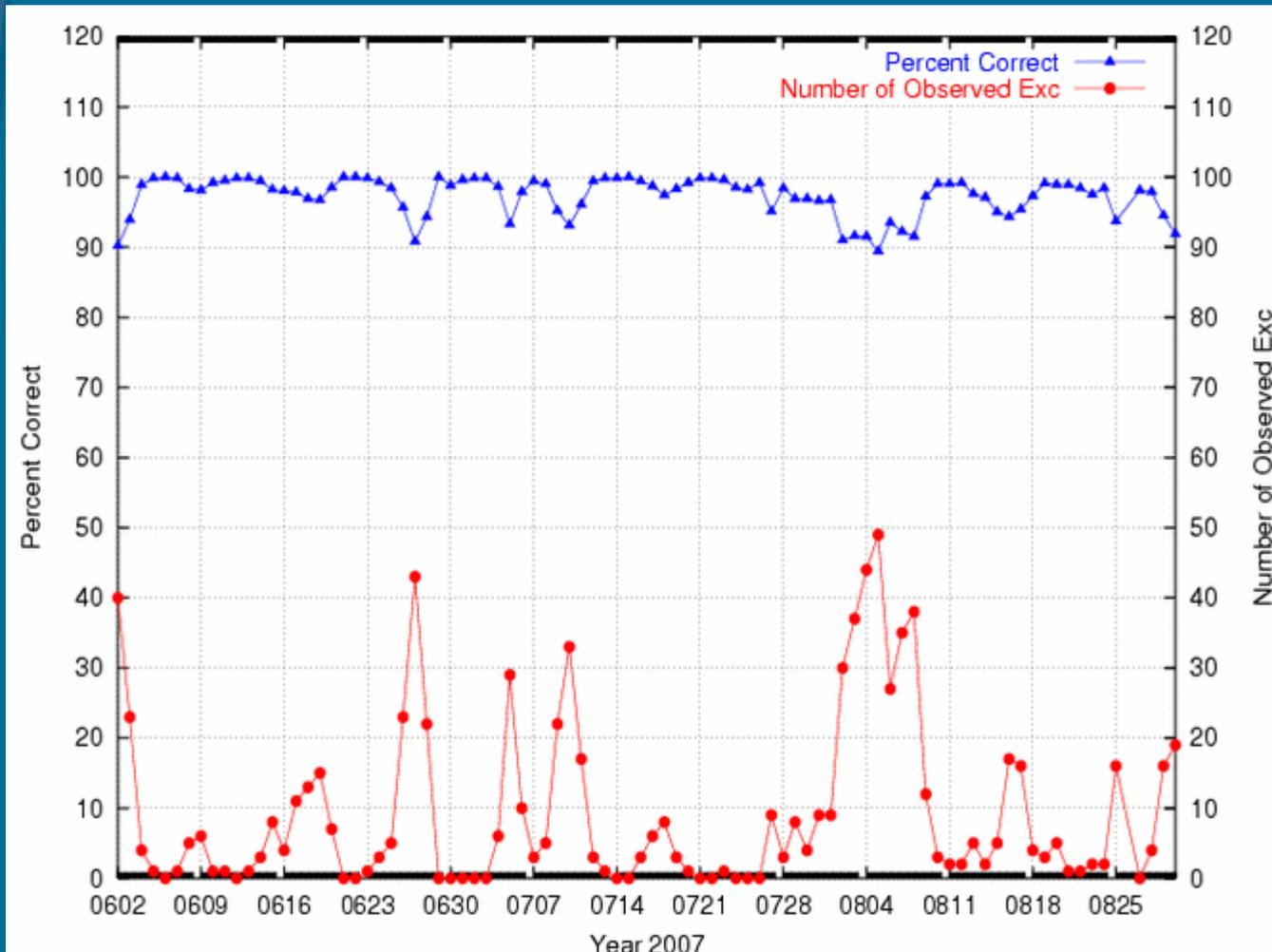


Aerosols, mean observations by region, March, 2007

Highest diurnal variability, by month



Aerosols, 24-h running avg less activity than 1-h avg



Daily max, 24-h avg, August 3, 2007 under-forecasting in the Midwest

