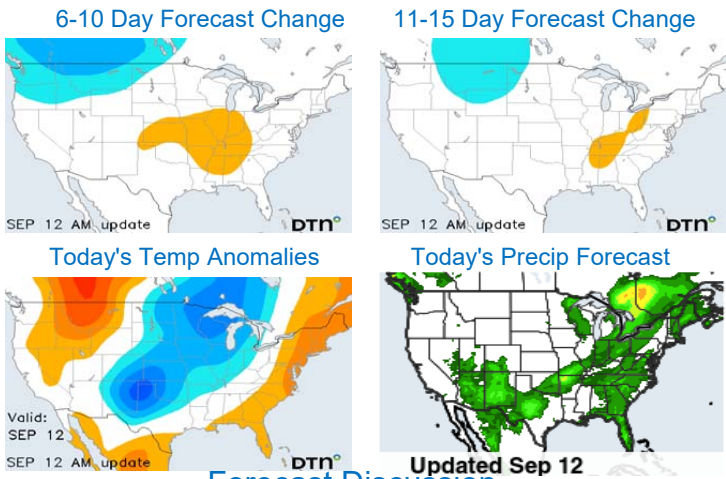


Weather Headlines

- ▶ Hurricane Lee could bring major impacts to New England and Atlantic Canada this weekend
- ▶ The forecast trended warmer across the Midwest/East and cooler in the Northwest during week two. Two other tropical threats are worth watching during week two



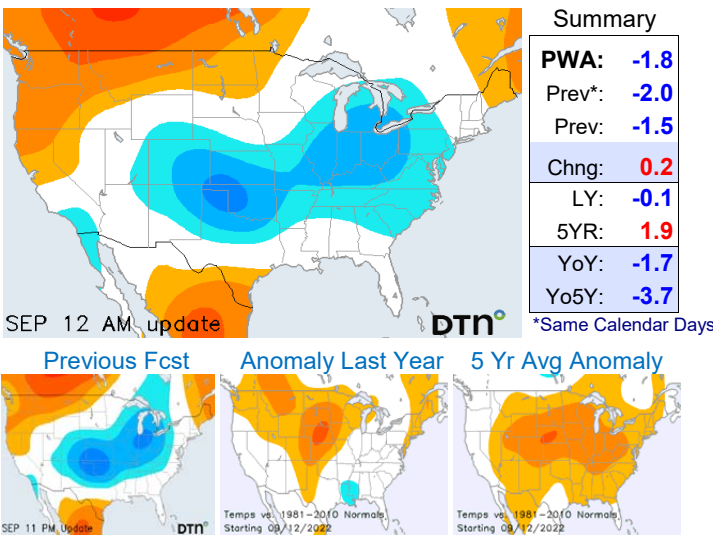
Forecast Discussion

Hurricane Lee will bring major impacts somewhere from eastern MA through Atlantic Canada this weekend, especially Saturday. It will likely be a hurricane upon approach. There is still uncertainty with the track. Some guidance brings it closer to New England, which would be a larger impact. Some guidance tracks it into Nova Scotia, which would reduce the impact to New England. The general model trend was closer to New England with the 0Z runs. The DTN forecast is a landfall somewhere in Downeast Maine to the New Brunswick line for now. The largest impacts will be to the east of the storm's center where storm surge and onshore winds will be a major problem. Power outages and flooding will be significant impacts with Lee. The area from the northeastern Gulf of Mexico through the Southeast Coast will need to be watched during week two. A front will stall offshore and sometimes tropical systems can form along such a feature. Another system will have to be watched as it attempts to re-curve during the day 11-15 period.

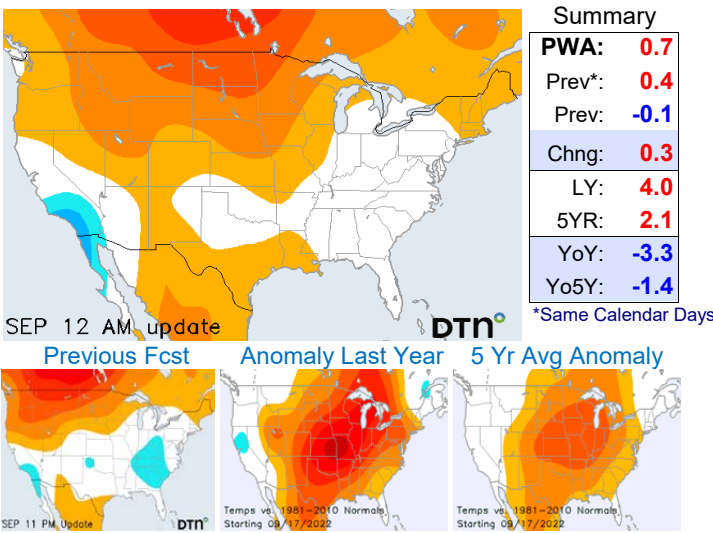
A fall air mass will drop through the Midwest through TX during the day 2-7 period. Significant relief to the summer heat is coming to TX. Eventually, the cooler air will reach the East Coast later this week. Meanwhile, above normal temperatures will develop along the West Coast. It will be warmest in the Pacific Northwest. A warming trend will take place across the Central US through the Midwest during the day 8-10 period where above normal temperatures will become widespread. Guidance trended warmer across the Midwest/Mid-South. At the same time, the GFS/GEFS came in cooler across the Northwest and temperatures had to be lowered.

A warmer pattern will be likely across most of the US during the day 11-15 period, especially the MS Valley/Great Lakes region. Guidance came in warmer across most of the East and readings were raised. This is especially true of the GFS/GEFS. The ECMWF was already warm, but it still is suffering from a warm bias for the last 90 days overall, so the forecast was set a little warmer than the GEFS, but not quite as warm as the ECMWF. Guidance came in cooler across the Northwest, mostly early in the period.

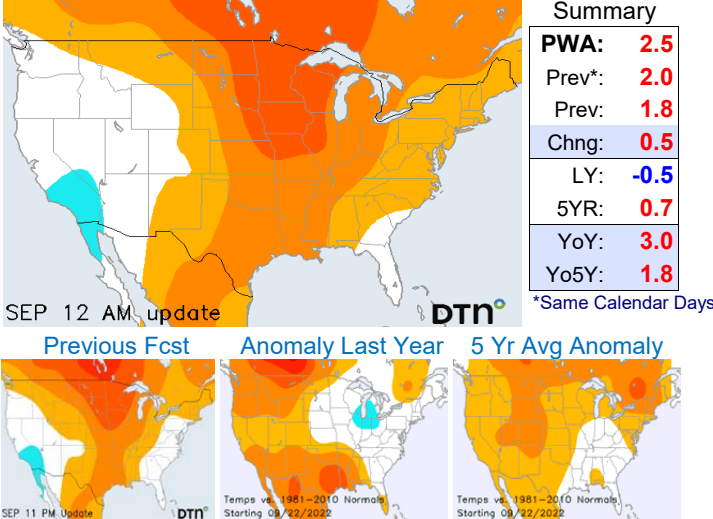
2-5 Day Forecast (Wed 9/13 to Sat 9/16)



6-10 Day Forecast (Sun 9/17 to Thu 9/21)

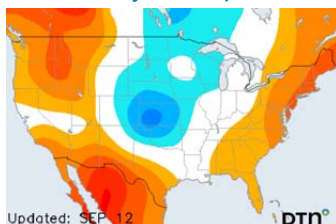


11-15 Day Forecast (Fri 9/22 to Tue 9/26)

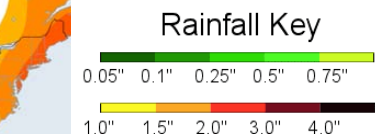


Day -1: Mon 9/11

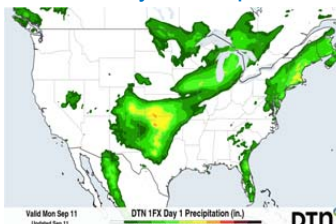
Yesterday's Temp Anoms



Updated: SEP 12



Yesterday's Precipitation

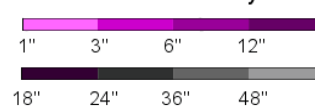


Valid Mon Sep 11  
Updated Sep 11

DTN 1FX Day 1 Precipitation (in.)

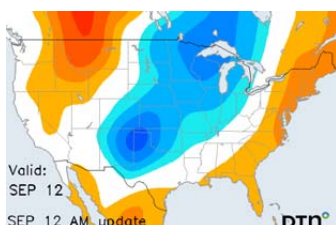
DTN

Snowfall Key



Day 1: Tue 9/12

New Forecast Anomalies



Valid: SEP 12  
SEP 12 AM update

Change from Previous Fcst



Valid: SEP 12  
SEP 12 AM update

Precipitation Forecast



Valid Tue Sep 12  
Updated Sep 12

DTN 1FX Day 1 Precipitation (in.)

DTN

Snowfall Forecast



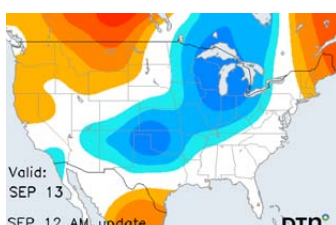
Valid Tue Sep 12  
Updated Sep 12

DTN 1FX Day 1 Estimated Snowfall (in.)

DTN

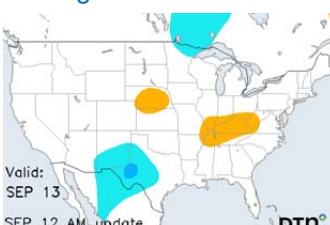
Day 2: Wed 9/13

New Forecast Anomalies



Valid: SEP 13  
SEP 12 AM update

Change from Previous Fcst



Valid: SEP 13  
SEP 12 AM update

Precipitation Forecast

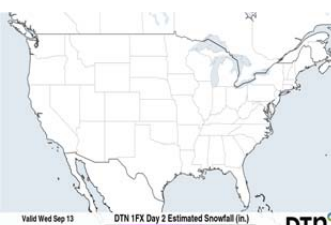


Valid Wed Sep 13  
Updated Sep 13

DTN 1FX Day 2 Precipitation (in.)

DTN

Snowfall Forecast



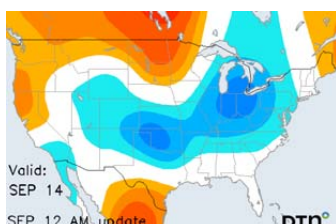
Valid Wed Sep 13  
Updated Sep 13

DTN 1FX Day 2 Estimated Snowfall (in.)

DTN

Day 3: Thu 9/14

New Forecast Anomalies



Valid: SEP 14  
SEP 12 AM update

Change from Previous Fcst



Valid: SEP 14  
SEP 12 AM update

Precipitation Forecast

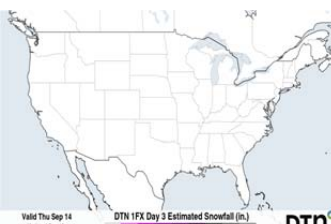


Valid Thu Sep 14  
Updated Sep 14

DTN 1FX Day 3 Precipitation (in.)

DTN

Snowfall Forecast



Valid Thu Sep 14  
Updated Sep 14

DTN 1FX Day 3 Estimated Snowfall (in.)

DTN

Day 4: Fri 9/15

New Forecast Anomalies



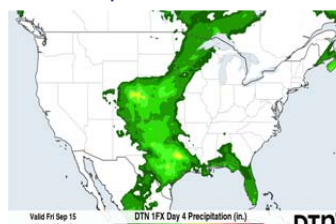
Valid: SEP 15  
SEP 12 AM update

Change from Previous Fcst



Valid: SEP 15  
SEP 12 AM update

Precipitation Forecast



Valid Fri Sep 15  
Updated Sep 15

DTN 1FX Day 4 Precipitation (in.)

DTN

Snowfall Forecast



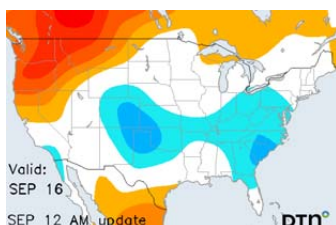
Valid Fri Sep 15  
Updated Sep 15

DTN 1FX Day 4 Estimated Snowfall (in.)

DTN

Day 5: Sat 9/16

New Forecast Anomalies



Valid: SEP 16  
SEP 12 AM update

Change from Previous Fcst



Valid: SEP 16  
SEP 12 AM update

Precipitation Forecast



Valid Sat Sep 16  
Updated Sep 16

DTN 1FX Day 5 Precipitation (in.)

DTN

Snowfall Forecast

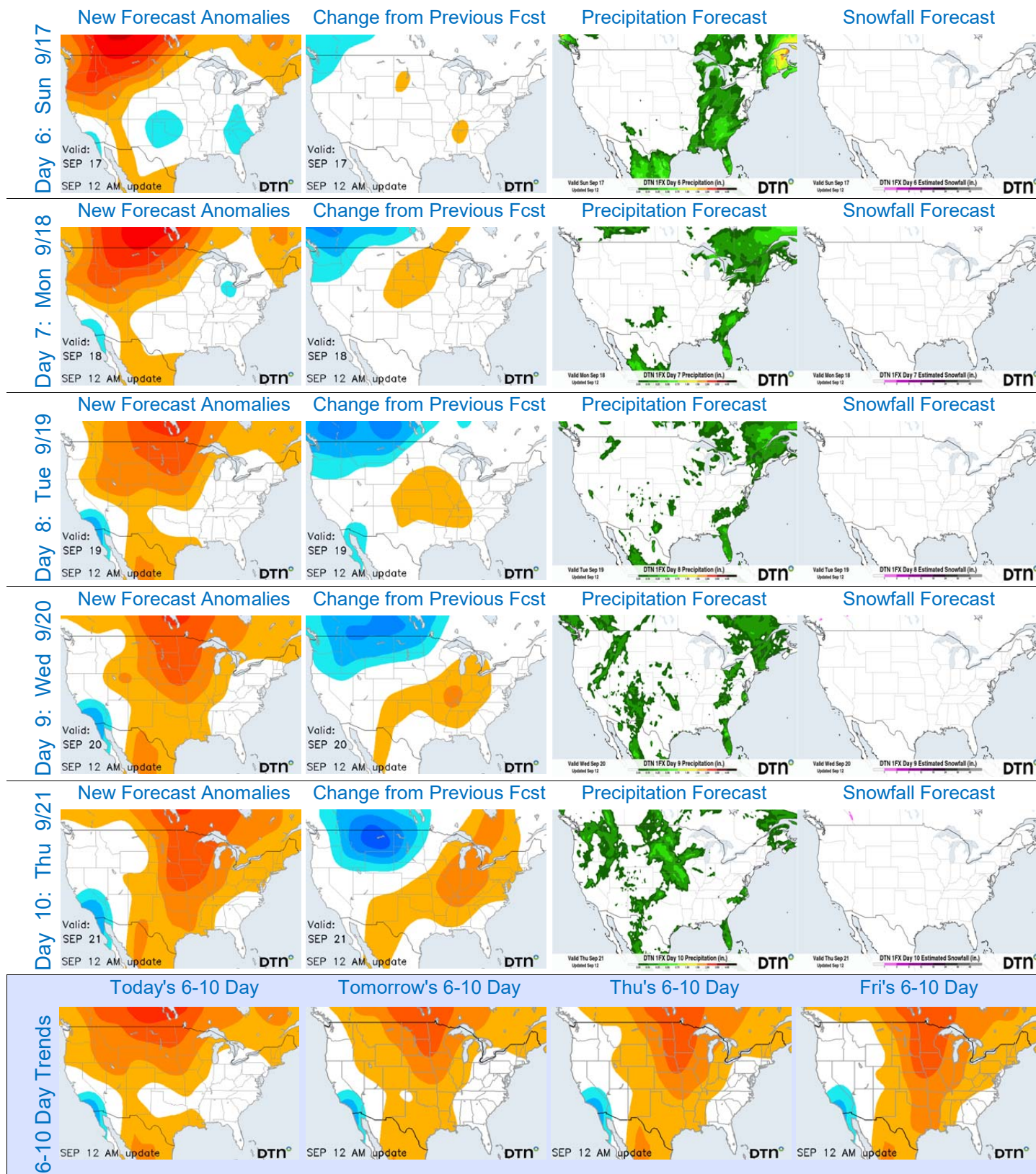


Valid Sat Sep 16  
Updated Sep 16

DTN 1FX Day 5 Estimated Snowfall (in.)

DTN

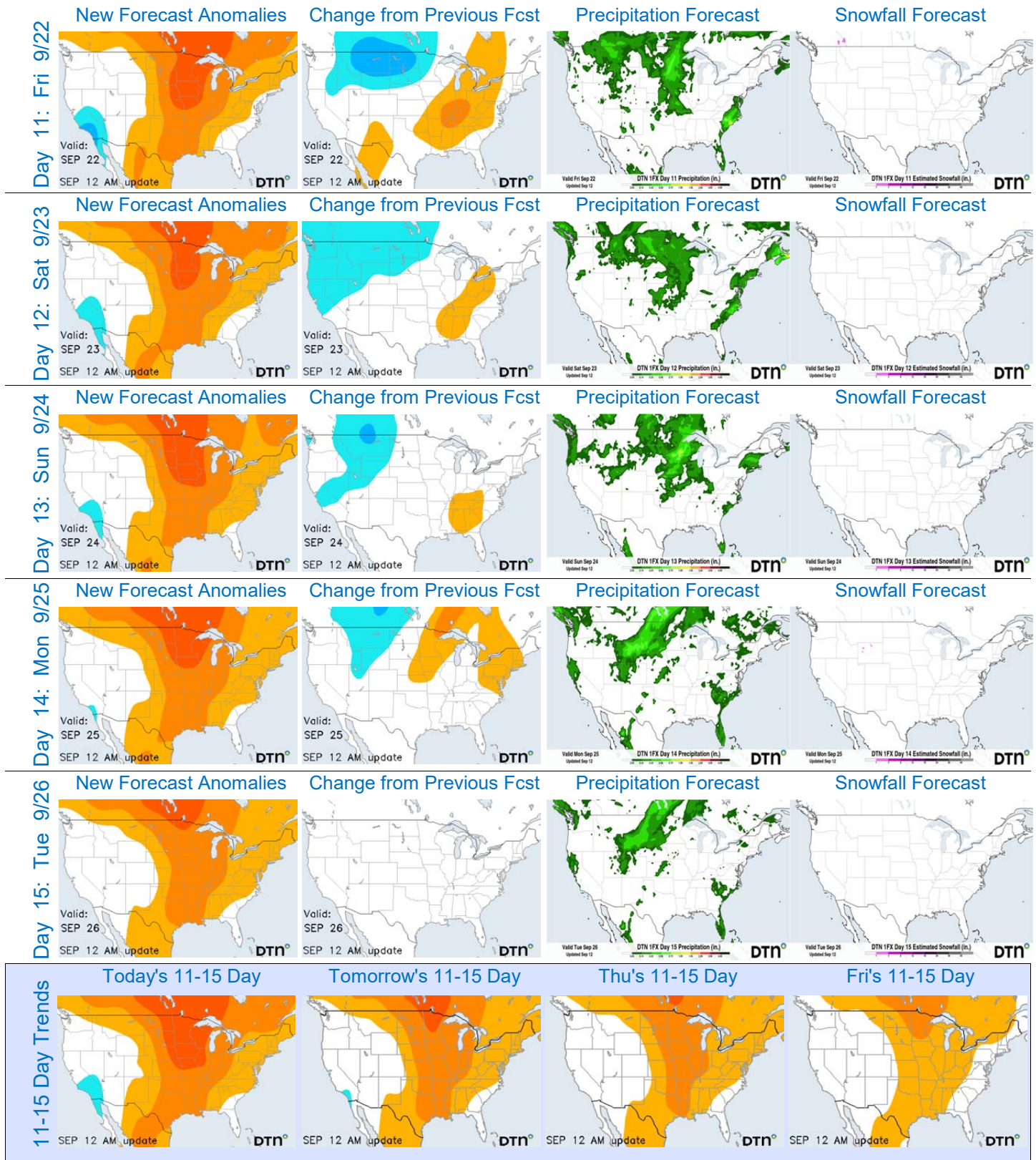




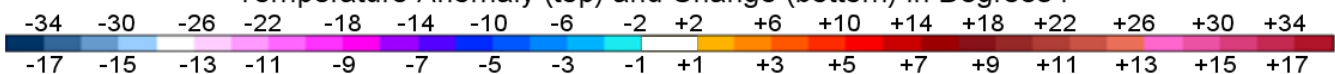
Temperature Anomaly (top) and Change (bottom) in Degrees F



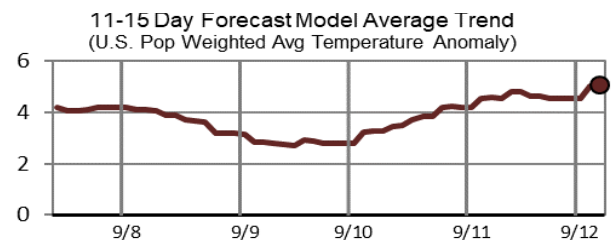
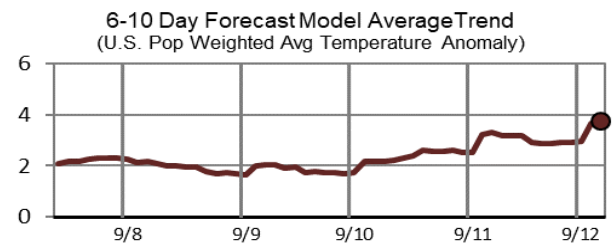
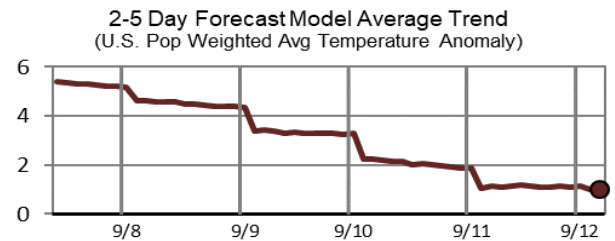
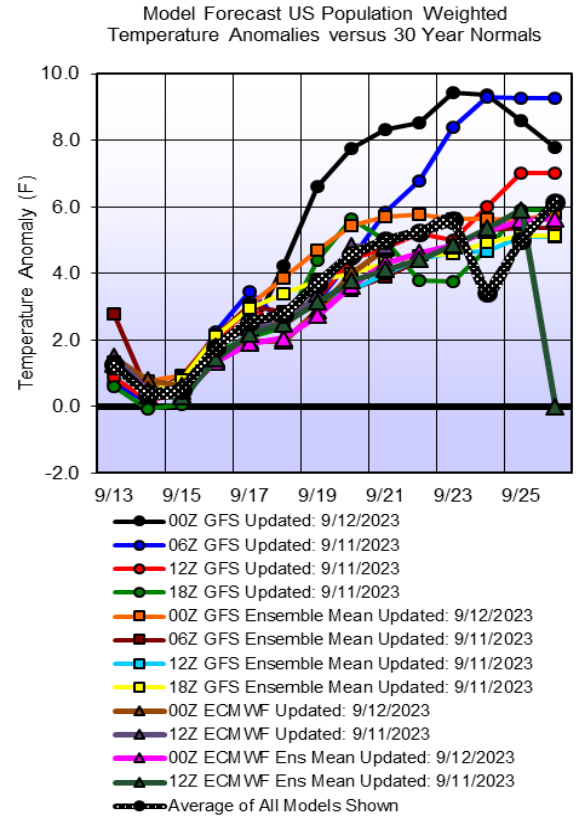
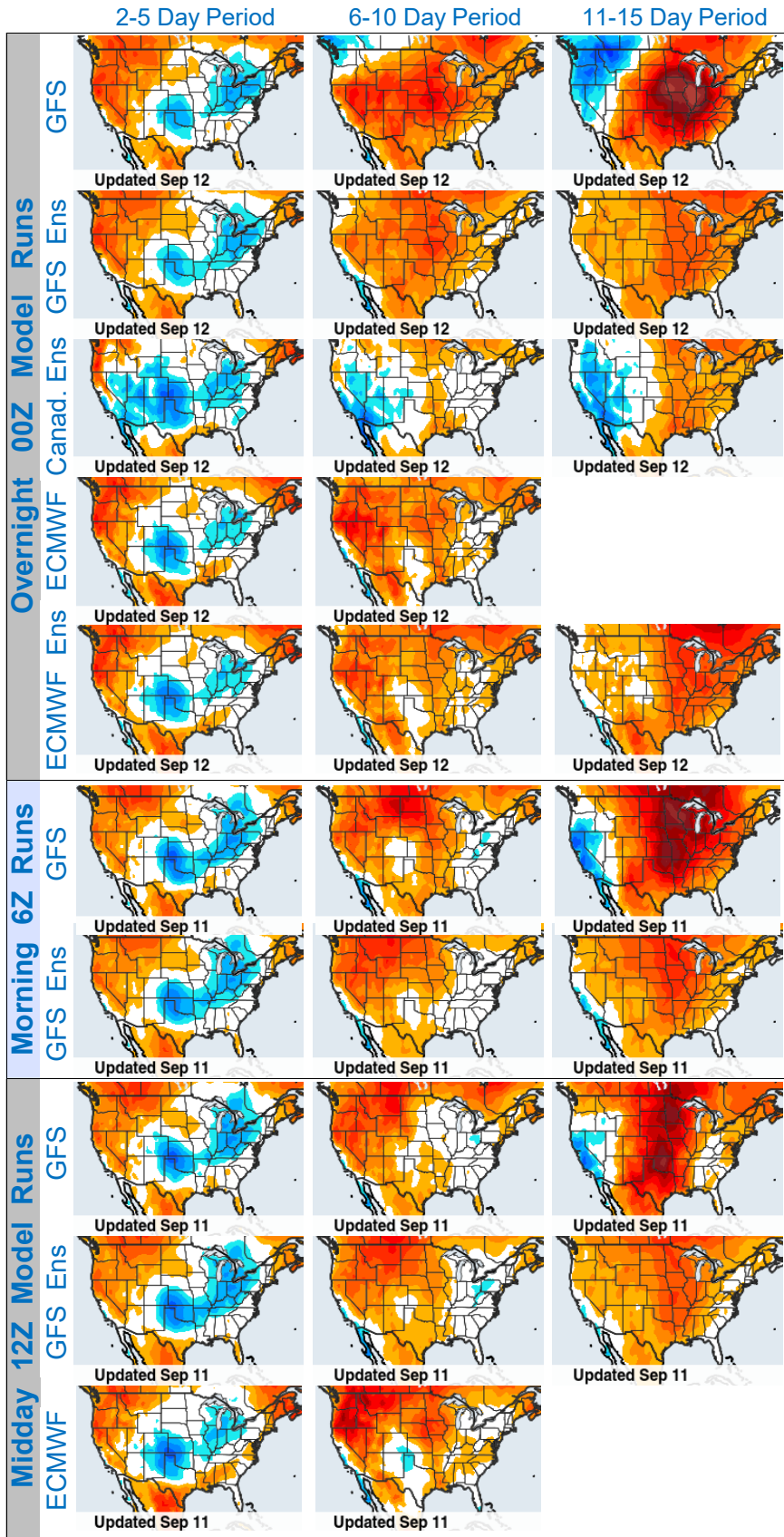




Temperature Anomaly (top) and Change (bottom) in Degrees F



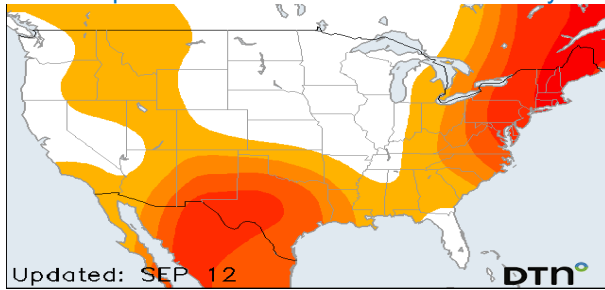
### Forecast Model Comparison



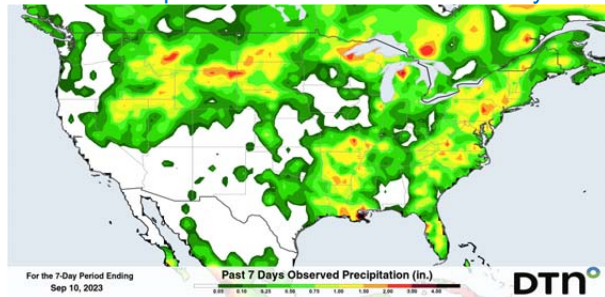


### Recent Weather and Climate Conditions

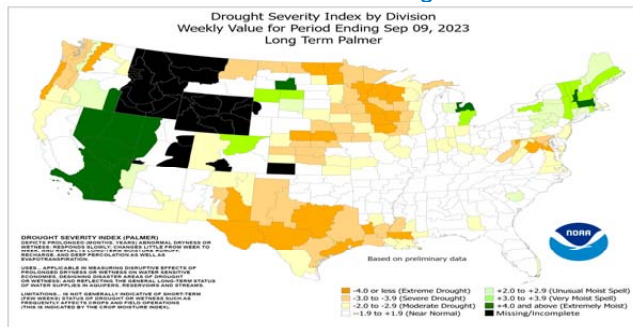
Temperature Anomalies for the Last 7 Days



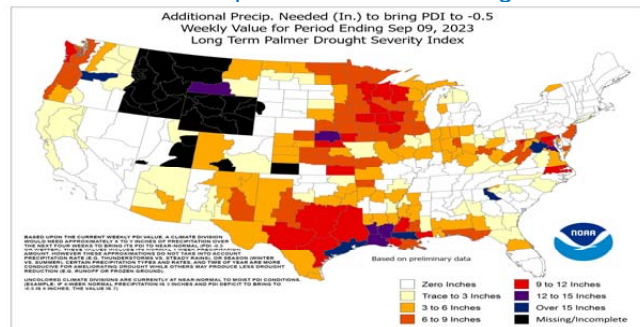
Precipitation Totals for the Last 7 Days



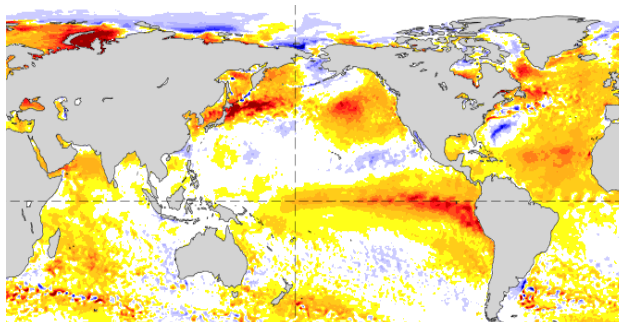
Current Palmer Drought Index



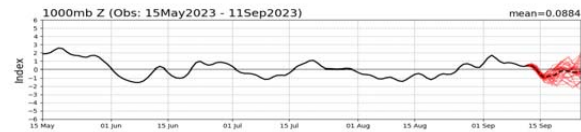
Precip Needed to End Drought



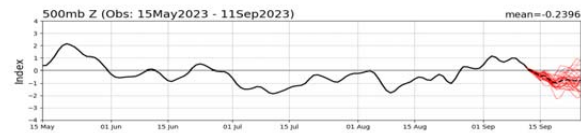
Current SST Anomalies (°C)



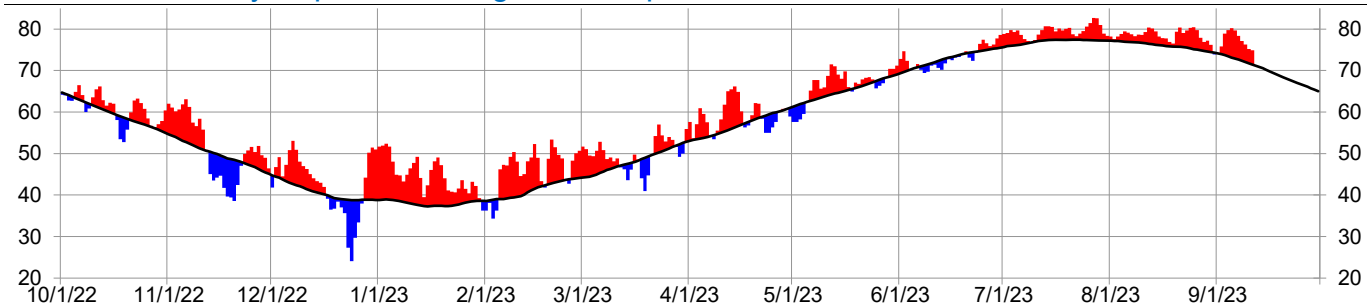
Arctic Oscillation Index



North Atlantic Oscillation Index



U.S. Daily Population Weighted Temperatures and Anomalies for the Last Year



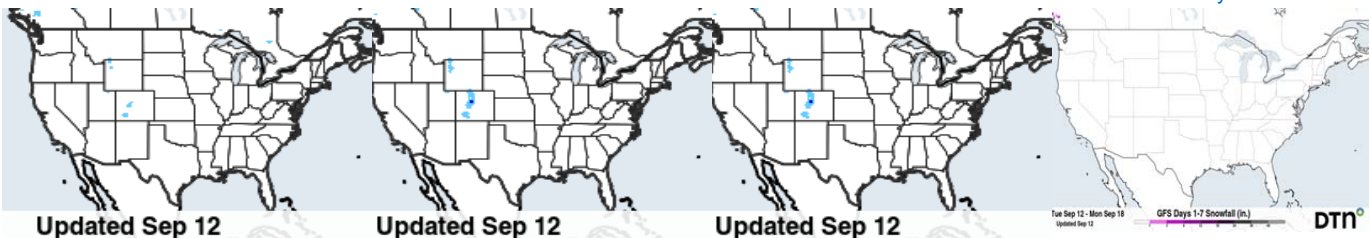
Freeze/Snowfall Forecast

9/13/2023 Frost/Freeze Outlook

9/14/2023 Frost/Freeze Outlook

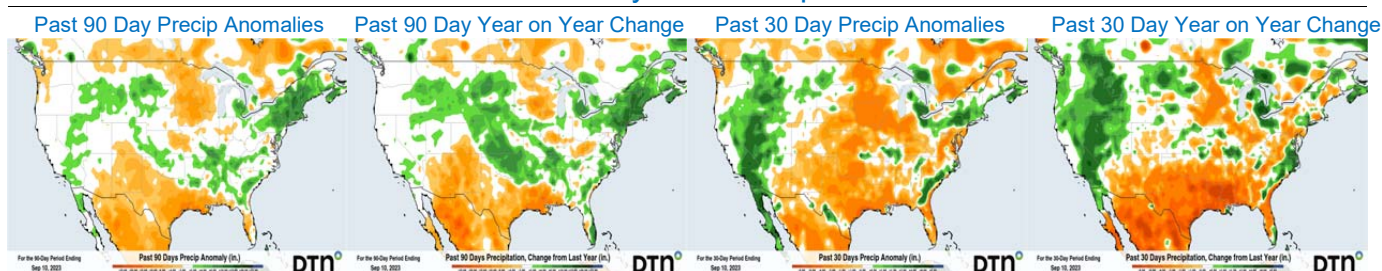
9/15/2023 Frost/Freeze Outlook

Latest GFS 7 Day Snow Forecast



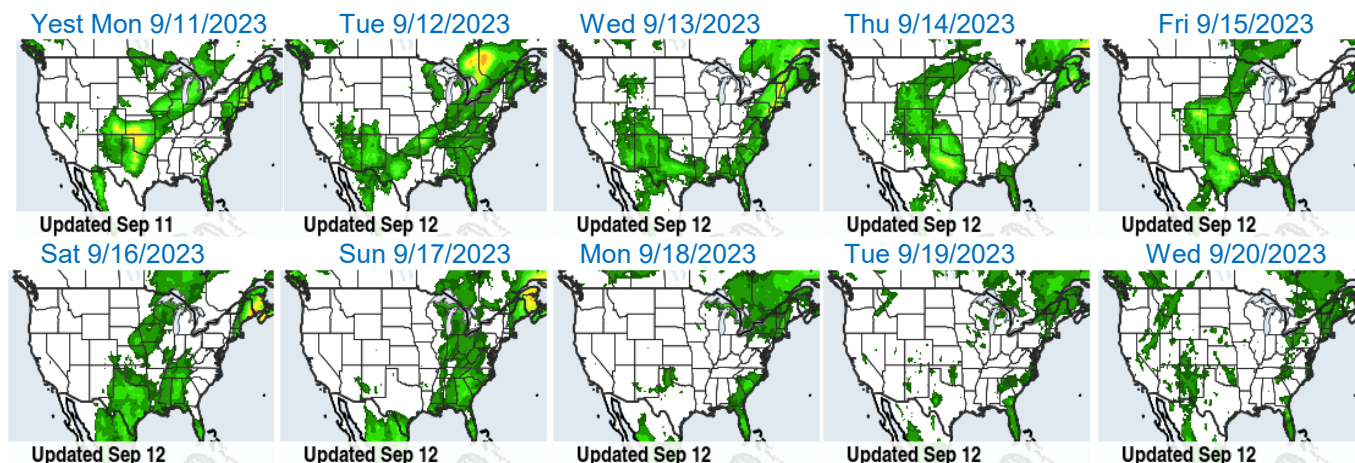
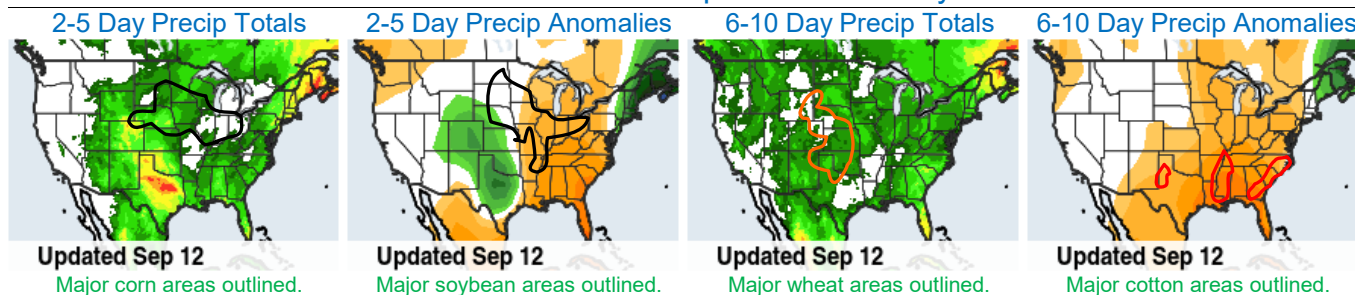
Contours are: Frost, Freeze, Hard Freeze, Killing Freeze

### Past 90 and 30 Day U.S. Precipitation Trends

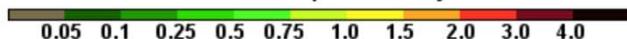


Above precip maps do not include observed precipitation during the day yesterday.

### U.S. Forecast Precipitation Summary



Total Precipitation Key



Precipitation Anomaly Key



### Next 7 Day Temperature & Precipitation Forecast Data

Region	Avg Hi/Lo*	Hi/Lo Anom	Highest**	Lowest**	Fcst Precip	Norm Precip	Precip Anom
Western Corn Belt	77°F/52°F	0/-1F	86°F	46°F	0.15"	0.63"	-0.48"
Eastern Corn Belt	74°F/53°F	-3/-2F	81°F	44°F	0.19"	0.68"	-0.49"
Western Soybeans	77°F/53°F	+1/0F	84°F	44°F	0.12"	0.65"	-0.53"
Eastern Soybeans	75°F/54°F	-4/-3F	85°F	44°F	0.18"	0.72"	-0.54"
Northern Wheat Belt	75°F/49°F	-2/+2F	86°F	38°F	0.69"	0.36"	+0.33"
Southern Wheat Belt	77°F/56°F	-7/-3F	85°F	50°F	1.08"	0.62"	+0.46"
Western SE Cotton	88°F/66°F	+1/+1F	95°F	60°F	0.31"	0.87"	-0.56"
Eastern SE Cotton	85°F/65°F	0/0F	92°F	55°F	0.48"	1.21"	-0.73"
Florida Citrus	91°F/73°F	+1/+1F	95°F	69°F	0.47"	1.47"	-1"

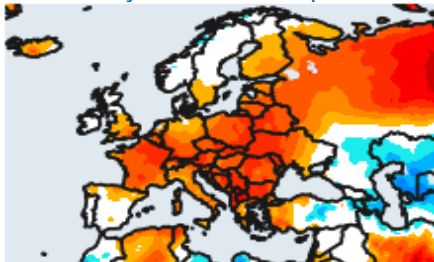
\*Avg Hi/Lo are the average forecast high and low temperatures for the next 7 days averaged over all cities in a region.

\*\*Highest and lowest forecast temperature is the absolute highest and lowest forecast temperature out of all cities in a given ag region



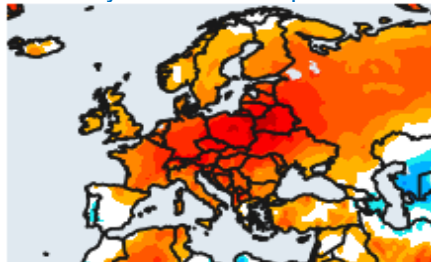
### Europe Weather Summary

2-5 Day Forecast Temp Anomalies



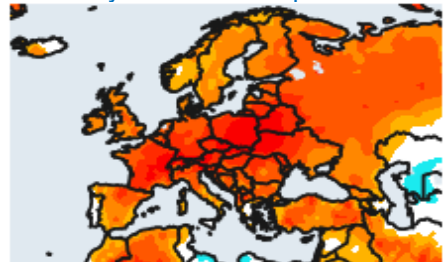
Updated Sep 12

6-10 Day Forecast Temp Anomalies



Updated Sep 12

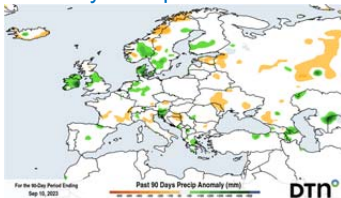
11-15 Day Forecast Temp Anomalies



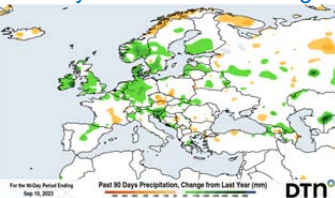
Updated Sep 12

Past 30 and 90 Day Precipitation Trends

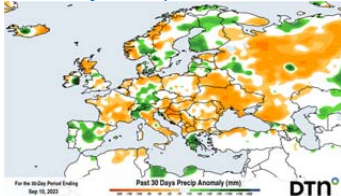
30 Day Precip Anomalies



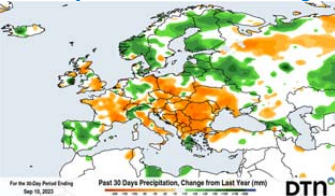
30 Day Year on Year Change



90 Day Precip Anomalies

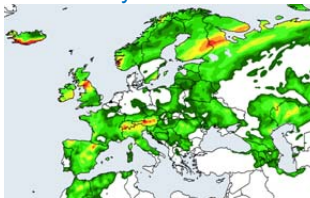


90 Day Year on Year Change

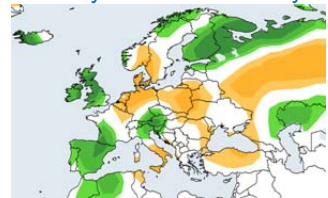


Forecast Precipitation Trends

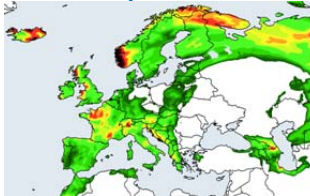
2-5 Day Forecast Totals



2-5 Day Forecast Anomaly



6-10 Day Forecast Totals

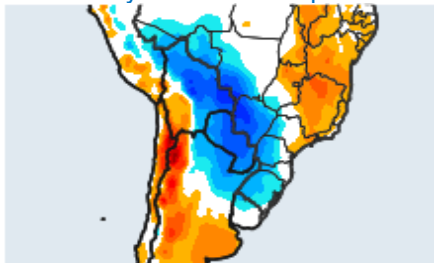


6-10 Day Forecast Anomaly



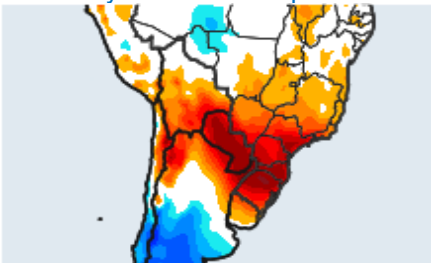
### South America Weather Summary

2-5 Day Forecast Temp Anomalies



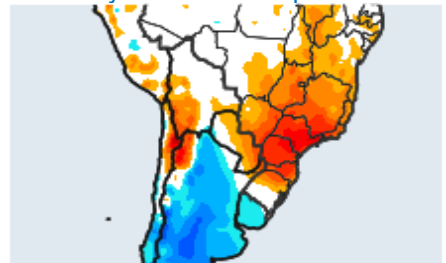
Updated Sep 12

6-10 Day Forecast Temp Anomalies



Updated Sep 12

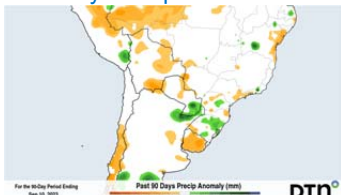
11-15 Day Forecast Temp Anomalies



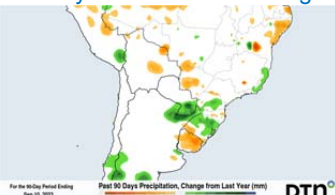
Updated Sep 12

Past 30 and 90 Day Precipitation Trends

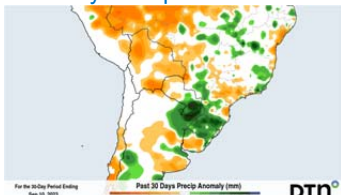
30 Day Precip Anomalies



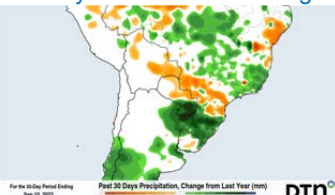
30 Day Year on Year Change



90 Day Precip Anomalies

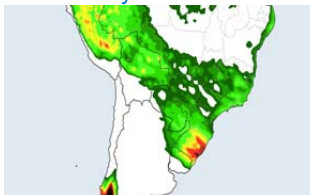


90 Day Year on Year Change

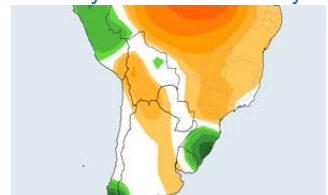


Forecast Precipitation Trends

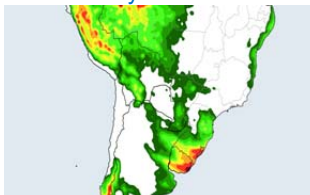
2-5 Day Forecast Totals



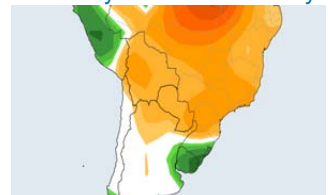
2-5 Day Forecast Anomaly



6-10 Day Forecast Totals



6-10 Day Forecast Anomaly



Major corn areas outlined.

Major soybean areas outlined.

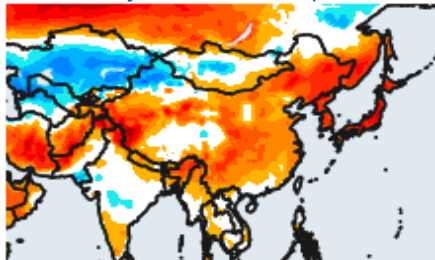
Major wheat & coffee areas.

Major cotton areas.



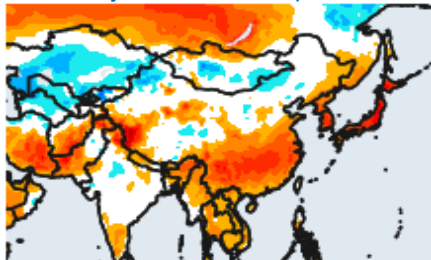
### Eastern Asia Weather Summary

2-5 Day Forecast Temp Anomalies



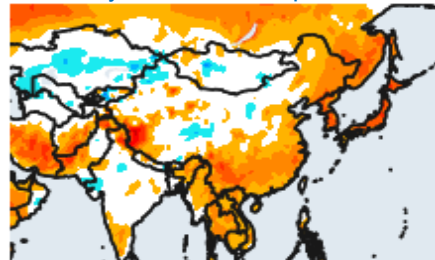
Updated Sep 12

6-10 Day Forecast Temp Anomalies



Updated Sep 12

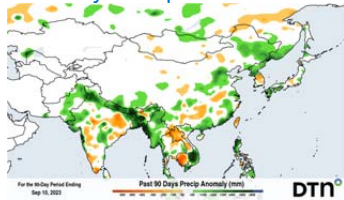
11-15 Day Forecast Temp Anomalies



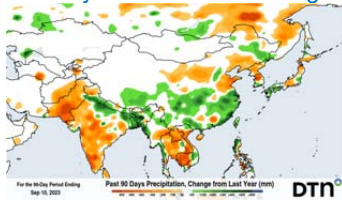
Updated Sep 12

Past 30 and 90 Day Precipitation Trends

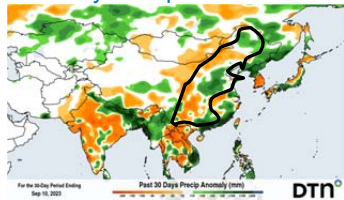
30 Day Precip Anomalies



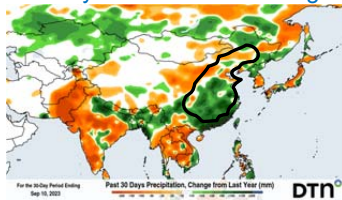
30 Day Year on Year Change



90 Day Precip Anomalies



90 Day Year on Year Change

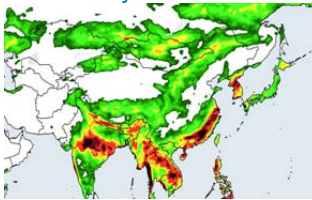


Major corn areas outlined

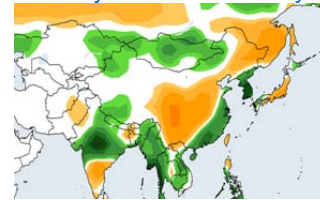
Major soybean areas outlined

Forecast Precipitation Trends

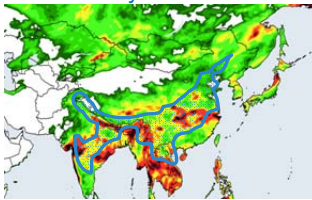
2-5 Day Forecast Totals



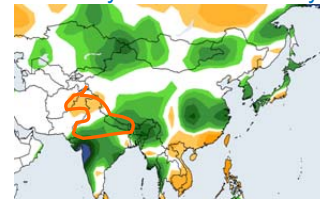
2-5 Day Forecast Anomaly



6-10 Day Forecast Totals



6-10 Day Forecast Anomaly

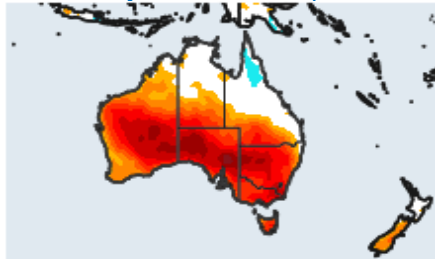


Major rice areas outlined

Major wheat areas outlined

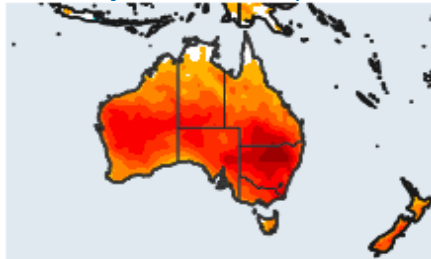
### Australia Weather Summary

2-5 Day Forecast Temp Anomalies



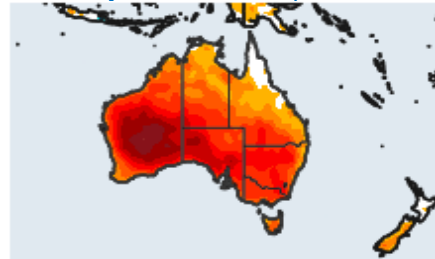
Updated Sep 12

6-10 Day Forecast Temp Anomalies



Updated Sep 12

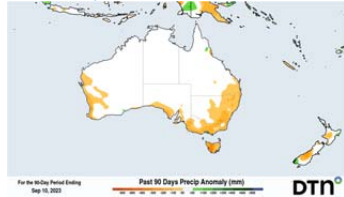
11-15 Day Forecast Temp Anomalies



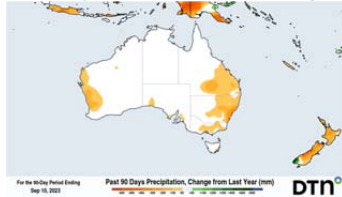
Updated Sep 12

Past 30 and 90 Day Precipitation Trends

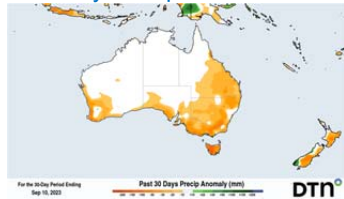
30 Day Precip Anomalies



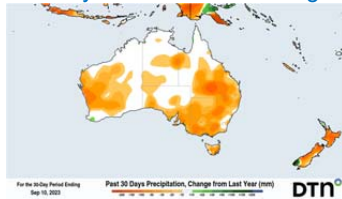
30 Day Year on Year Change



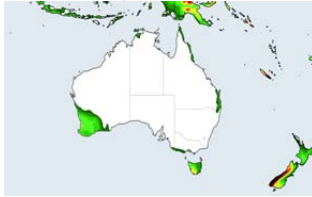
90 Day Precip Anomalies



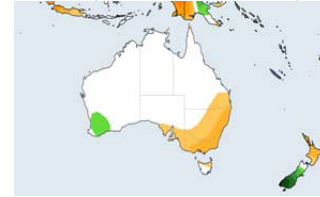
90 Day Year on Year Change



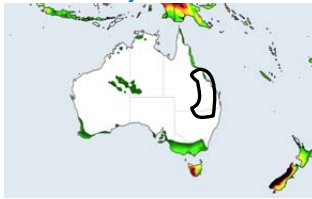
2-5 Day Forecast Totals



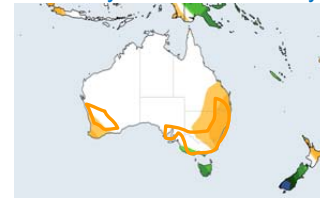
2-5 Day Forecast Anomaly



6-10 Day Forecast Totals



6-10 Day Forecast Anomaly



Major cotton areas outlined

Major wheat areas outlined

### Regional Daily Temperature and Precipitation Averages

Consult Individual City Forecast Product for City Specific Temperature Forecasts

		Last 5 Days					Next 10 Days									
New England	Date	9/7	9/8	9/9	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17	9/18	9/19	9/20	9/21
	Avg High	91	86	83	73	75	76	74	72	72	70	75	75	74	74	74
	Avg Low	68	69	67	65	66	65	64	60	54	57	57	56	54	53	53
	Anomaly	14	12	10	5	6	7	5	3	0	1	4	4	3	3	3
	Avg Prcp	0.3	0.01	0	0	0.05	0.09	0.62	0.09	0	0.49	0.16	0.03	0.09	0.06	0
Mid-Atlantic	Weekday	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu
	Avg High	92	86	82	80	82	81	74	73	73	76	78	77	77	78	79
	Avg Low	71	68	68	67	65	64	63	56	53	54	57	58	57	57	58
	Anomaly	12	8	6	5	6	5	1	-3	-4	-1	1	2	2	2	4
	Avg Prcp	0.41	0.01	0.01	0	0	0.09	0.4	0	0	0	0.02	0.11	0.04	0.02	0
Southeast	Date	9/7	9/8	9/9	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17	9/18	9/19	9/20	9/21
	Avg High	94	89	87	89	92	88	87	85	85	85	85	86	87	87	88
	Avg Low	72	69	68	69	68	70	69	67	65	64	65	65	65	66	66
	Anomaly	5	1	0	2	4	3	2	0	-1	-1	0	1	2	3	3
	Avg Prcp	0.08	0	0.09	0	0	0.06	0.1	0.05	0.03	0.02	0.11	0.09	0.05	0.02	0.01
C-S Florida	Weekday	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu
	Avg High	93	88	90	92	93	93	91	92	88	87	89	89	89	89	89
	Avg Low	75	71	71	75	74	75	76	75	75	74	73	74	74	74	73
	Anomaly	1	-3	-2	1	1	2	2	1	0	-1	-1	0	0	0	0
	Avg Prcp	0.02	0	0.46	0	0	0.22	0.06	0.06	0.19	0.1	0.12	0.31	0.2	0.11	0.03
Midwest	Date	9/7	9/8	9/9	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17	9/18	9/19	9/20	9/21
	Avg High	77	78	79	78	77	72	73	76	76	76	76	77	79	81	82
	Avg Low	60	60	60	59	58	58	52	52	53	54	55	54	56	58	60
	Anomaly	-2	0	0	0	0	-3	-5	-3	-3	-1	-1	0	3	5	7
	Avg Prcp	0.04	0	0	0.01	0.14	0.09	0.01	0	0.01	0.02	0.04	0.02	0.01	0.01	0.03
C-N Plains	Weekday	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu
	Avg High	85	86	82	74	73	76	78	77	74	76	80	83	82	81	78
	Avg Low	52	55	55	53	51	49	51	54	53	51	51	52	53	53	53
	Anomaly	2	4	3	-2	-3	-2	1	2	0	1	4	6	7	7	6
	Avg Prcp	0.02	0	0	0.01	0.13	0	0.01	0.11	0.17	0.03	0	0	0.02	0.02	0.04
South-Central	Date	9/7	9/8	9/9	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17	9/18	9/19	9/20	9/21
	Avg High	102	101	95	93	89	83	82	82	83	85	86	89	90	91	91
	Avg Low	74	75	70	67	67	68	67	66	65	65	64	64	66	67	68
	Anomaly	9	9	4	2	0	-2	-3	-2	-2	-1	0	1	3	5	6
	Avg Prcp	0	0	0	0	0	0.08	0.12	0.22	0.16	0.16	0.08	0.03	0.03	0.07	0.01
Southwest	Weekday	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu
	Avg High	97	99	100	98	95	89	89	91	91	91	91	90	88	88	87
	Avg Low	68	72	74	74	72	70	67	67	67	67	68	67	66	65	65
	Anomaly	3	6	7	6	4	1	-1	0	1	1	2	1	0	0	0
	Avg Prcp	0	0.3	0.31	0.7	0.31	0.08	0.04	0	0	0	0	0	0.02	0.1	0.02
Northwest	Date	9/7	9/8	9/9	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17	9/18	9/19	9/20	9/21
	Avg High	79	83	86	85	81	79	82	86	89	88	84	80	78	77	77
	Avg Low	57	54	57	57	58	58	58	57	59	60	59	58	56	53	54
	Anomaly	0	1	4	4	3	2	4	5	8	8	6	4	2	1	1
	Avg Prcp	0	0.2	0.43	0.4	0.15	0.01	0	0	0	0	0	0.02	0.02	0.02	0.01
C-N Rockies	Weekday	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu
	Avg High	86	86	88	87	87	81	79	78	81	85	86	84	81	78	77
	Avg Low	55	56	55	58	57	57	56	53	53	53	56	57	55	52	51
	Anomaly	4	4	5	7	7	4	3	2	3	6	8	8	6	3	2
	Avg Prcp	0	0.04	0.09	0.28	0.12	0	0.02	0.06	0.01	0	0	0	0.02	0.05	0.08



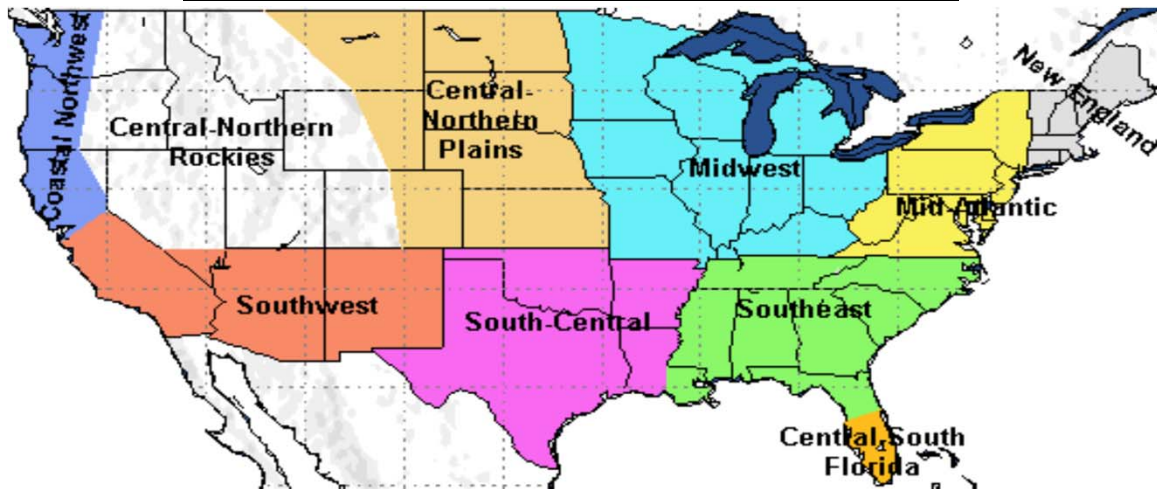
## Notes

PWA=Population Weighted Average Temp Anomaly

YOY=PWA for this year minus PWA for same period last year

YO5Y=PWA for this year minus five year average PWA for same period.

### Regional Temperature and Precipitation Forecast Boundaries



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