

NATIONAL WEATHER SERVICE INSTRUCTION 10-516

MAY 24, 2022

Operations and Services

Public Weather Services, NWSPD 10-5

NATIONAL NON-PRECIIPITATION WEATHER PRODUCTS SPECIFICATION

NOTICE: This publication is available at: <https://www.weather.gov/directives/>.

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National Non-Precipitation Weather Products Specification

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1. Introduction

This procedural directive describes national non-precipitation weather products issued at the National Weather Service (NWS), National Centers for Environmental Prediction (NCEP), guidelines associated with these products, and detailed content and format for each product type. Heat index products are issued by the Weather Prediction Center (WPC) for the contiguous United States (CONUS), while air quality products are issued by the Environmental Modeling Center (EMC) for differing domains.

2. Day 3-7 Maximum Heat Index Probability Forecast Graphics

2.1 Mission Connection

WPC issues probabilistic daily maximum Heat Index forecast graphics for days 3 through 7 as guidance to CONUS NWS field offices and the general meteorological community (private sector and the media). These products support the NWS excessive heat outlook services by providing early indications of significant heat related events and are issued in probabilistic form to better represent the forecast uncertainty associated with a particular event.

2.2 Issuance Guidelines

2.2.1 Creation Software

WPC uses NCEP Advanced Weather Interactive Processing System (NAWIPS) software to generate these products.

2.2.2 Issuance Criteria

These are routine, schedule-driven products issued for days 3 through 7.

2.2.3 Issuance Time

Refer to Table 1.

2.2.4 Valid Time

Refer to Table 1.

<i>WPC Day 3-7 Max Heat Index Probability Forecast Graphics Product Schedule</i>					
<i>Issuance Time (UTC)</i>	<i>Valid Time</i>	<i>AWIPS ID</i>	<i>WMO Header</i>	<i>Max Heat Index Thresholds (%)</i>	<i>Product Description</i>
0430 1630	Day 3	RBG396 RBG300 RGB305 RGB310 RGB315	PTNK98 KWNH PTNK98 KWNH PTNK98 KWNH PTNK98 KWNH PTNK98 KWNH	Chance > 95F Chance > 100F Chance > 105F Chance > 110F Chance > 115F	Day 3 probabilities of daily maximum Heat Index exceeding predetermined thresholds
0430 1630	Day 4	RBG496 RBG400 RGB405 RGB410 RGB415	PTNM98 KWNH PTNM98 KWNH PTNM98 KWNH PTNM98 KWNHPTNM98 KWNH	Chance > 95F Chance > 100F Chance > 105F Chance > 110F Chance > 115F	Day 4 probabilities of daily maximum Heat index exceeding predetermined thresholds

0430 1630	Day 5	RBG596 RBG500 RGB505 RGB510 RGB515	PTNO98 KWNH PTNO98 KWNH PTNO98 KWNH PTNO98 KWNH PYNO98KWNH	Chance > 95F Chance > 100F Chance > 105F Chance > 110F Chance > 115F	Day 5 probabilities of daily maximum Heat Index exceeding predetermined thresholds
0430 1630	Day 6	RBG696 RBG600 RGB605 RGB610 RGB615	PTNQ98 KWNH PTNQ98 KWNH PTNQ98 KWNH PTNQ98 KWNH PTNQ98 KWNH	Chance > 95F Chance > 100F Chance > 105F Chance > 110F Chance > 115F	Day 6 probabilities of daily maximum Heat Index exceeding predetermined thresholds
0430 1630	Day 7	RBG796 RBG700 RGB705 RGB710 RGB715	PTNS98 KWNH PTNS98 KWNH PTNS98 KWNH PTNS98 KWNH PTNS98-KWNH	Chance > 95F Chance > 100F Chance > 105F Chance > 110F Chance > 115F	Day 7 probabilities of daily maximum Heat Index exceeding predetermined thresholds

Table 1. Probabilistic maximum Heat Index forecast graphic issuance and valid times.

2.2.5 Product Expiration Time

Product expires after the next issuance at either 0430 or 1630 UTC.

2.3 Technical Description

Charts should follow the format and content described in this section.

2.3.1 Universal Geographic Code Type

Not applicable.

2.3.2 Mass News Disseminator Broadcast Instruction Line

Not applicable.

2.3.3 Mass News Disseminator Product Type Line

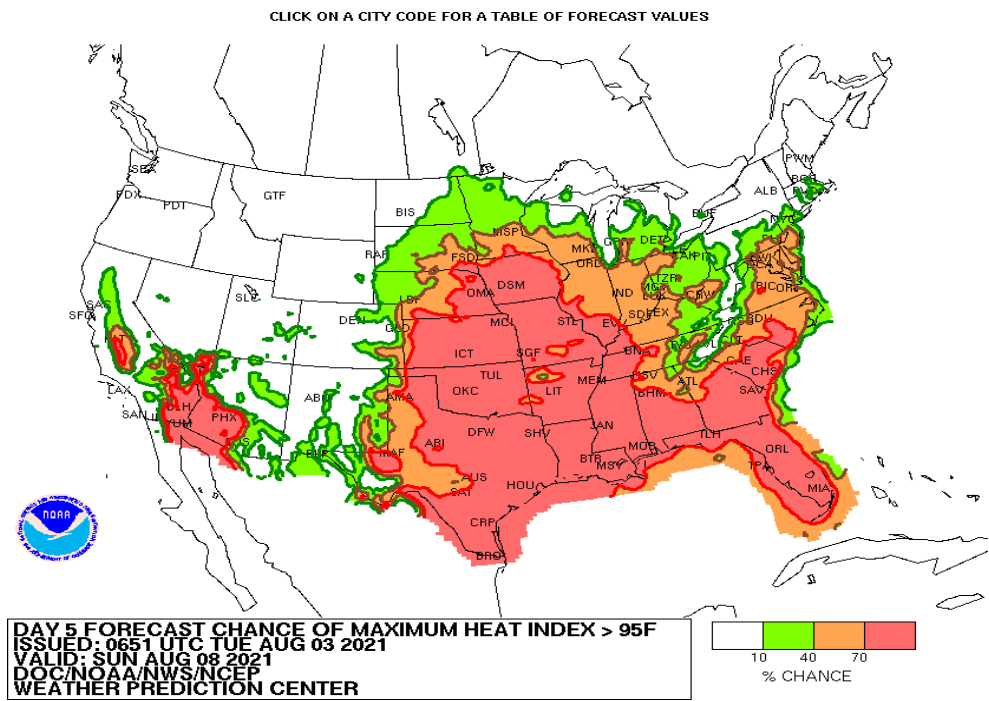
Not applicable.

2.3.4 Content

A graphical forecast product that shows the forecast maximum Heat Index and probabilities of daily maximum Heat Index (shaded contours) exceeding predetermined threshold values within the CONUS for days 3 through 7. The shaded contours indicate the probability (e.g., 10%, 40%, 70%) that a location within the shaded area will receive greater than or equal to a daily maximum heat index of 95 F, 100 F, 105 F, 110 F, and 115 F respectively.

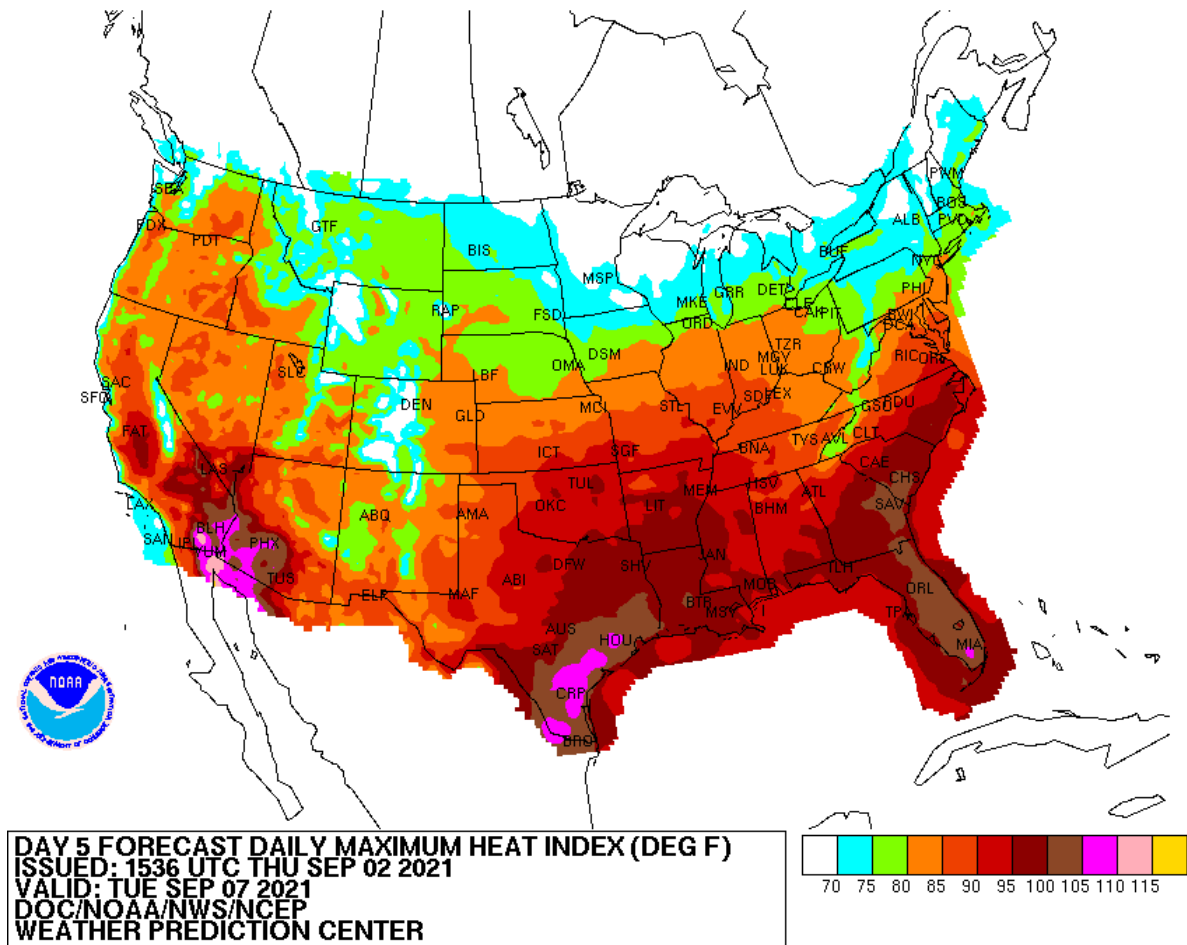
2.3.5 Format Examples

Examples 1 and 2 below show graphical Day 5 forecasts of Probabilities of Maximum Heat Index exceeding 95 F and Graphical Day 5 forecasts of Maximum Heat Index, respectively.



Example 1: Probability of Maximum Heat Index >95 F (Day 5)

CLICK ON A CITY CODE FOR A TABLE OF FORECAST VALUES



Example 2: Daily Maximum Heat Index Forecast (Day 5)

3. Day 3-7 Minimum Heat Index Probability Forecast Graphics

3.1 Mission Connection

WPC issues probabilistic daily minimum Heat Index forecast graphics for days 3 through 7 as guidance to CONUS NWS field offices and the general meteorological community (private sector and the media). These products support the NWS excessive heat outlook services by providing early indications of significant heat related events and are issued in probabilistic form to better represent the forecast uncertainty associated with a particular event.

3.2 Issuance Guidelines

3.2.1 Creation Software

WPC uses N-AWIPS software to generate these products.

3.2.2 Issuance Criteria

These are routine, schedule-driven products issued for days 3 through 7.

3.2.3 Issuance Time

Refer to Table 2.

3.2.4 Valid Time

Refer to Table 2.

<i>WPC Day 3-7 Minimum Heat Index Probability Forecast Graphics Product Schedule</i>					
<i>Issuance Time (UTC)</i>	<i>Valid Time</i>	<i>AWIPS ID</i>	<i>WMO Header</i>	<i>Min Heat Index Thresholds (%)</i>	<i>Product Description</i>
0430 1630	Day 3	RBG375 RBG380 RGB384	PTNK98 KWNH PTNK98 KWNH PTNK98 KWNH	Chance > 75F Chance > 80F Chance > 85F	Day 3 probabilities of daily minimum Heat Index exceeding predetermined thresholds
0430 1630	Day 4	RBG475 RBG480 RGB484	PTNM98 KWNH PTNM98 KWNH PTNM98 KWNH	Chance > 75F Chance > 80F Chance > 85F	Day 4 probabilities of daily minimum Heat index exceeding predetermined thresholds
0430 1630	Day 5	RBG575 RBG580 RGB584	PTNO98 KWNH PTNO98 KWNH PTNO98 KWNH	Chance > 75F Chance > 80F Chance > 85F	Day 5 probabilities of daily minimum Heat Index exceeding predetermined thresholds
0430 1630	Day 6	RBG675 RBG680 RGB684	PTNQ98 KWNH PTNQ98 KWNH PTNQ98 KWNH	Chance > 75F Chance > 80F Chance > 85F	Day 6 probabilities of daily minimum Heat Index exceeding predetermined thresholds
0430 1630	Day 7	RBG775 RBG780 RGB784	PTNS98 KWNH PTNS98 KWNH PTNS98 KWNH	Chance > 75F Chance > 80F Chance > 85F	Day 7 probabilities of daily minimum Heat Index exceeding predetermined thresholds

Table 2. Probabilistic minimum Heat Index forecast graphic issuance and valid times.

3.2.5 Product Expiration Time

Product expires after the next issuance at 0430 or 1630 UTC.

3.3 Technical Description

Charts should follow the format and content described in this section.

3.3.1 Universal Geographic Code Type

Not applicable.

3.3.2 Mass News Disseminator Broadcast Instruction Line

Not applicable.

3.3.3 Mass News Disseminator Product Type Line

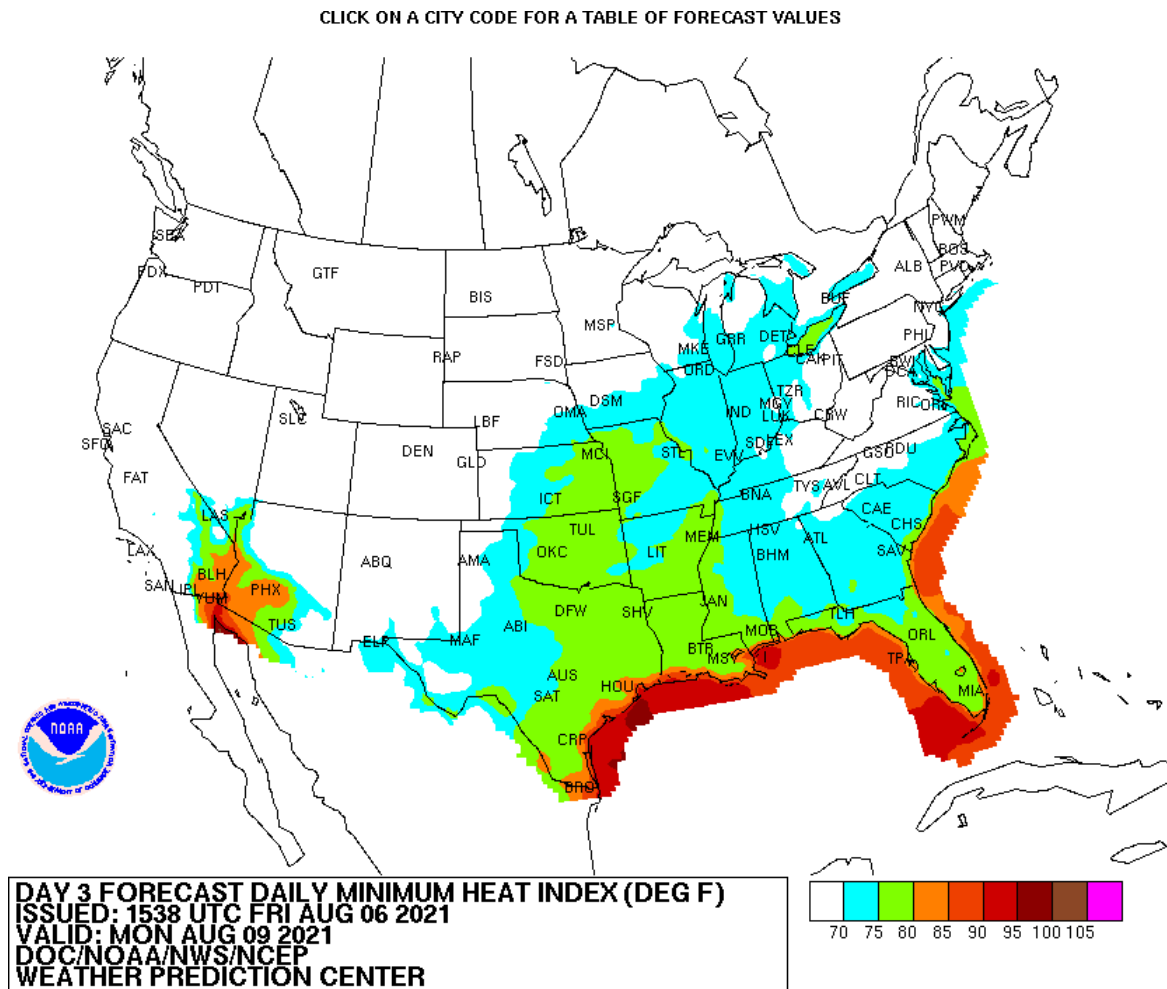
Not applicable.

3.3.4 Content

A graphical forecast product that shows the forecast minimum Heat Index and probabilities of daily minimum Heat Index (shaded contours) exceeding predetermined threshold values within the CONUS for days 3 through 7. The shaded contours indicate the probability (e.g., 10%, 40%, 70%) that a location within the shaded area will receive greater than or equal to a daily minimum heat index of 75 F, 80 F or 85 F respectively.

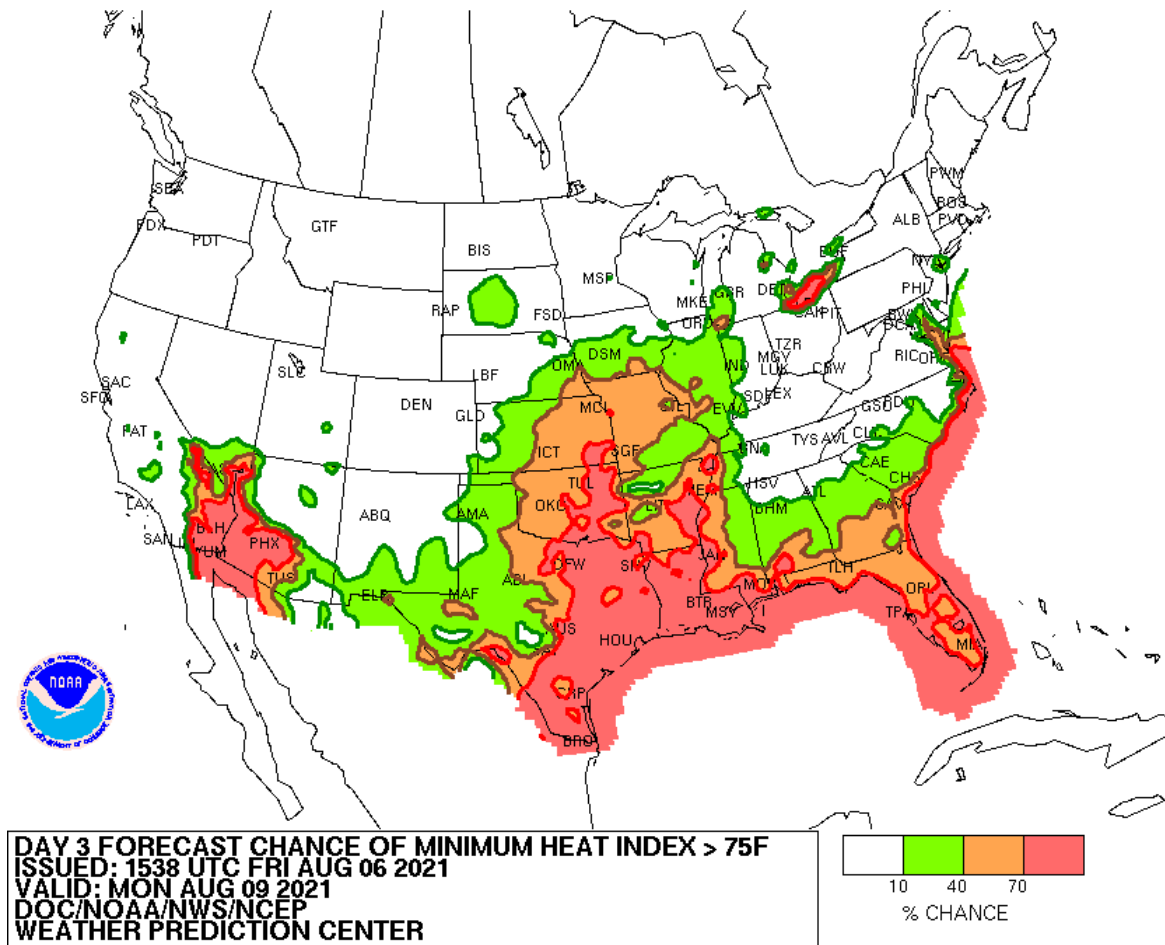
3.3.5 Format Examples

Examples 3 and 4 below show Graphical forecasts of Day 3 minimum Heat Index and probabilities of minimum Heat Index exceeding 75 F, respectively.



Example 3: Forecast Daily Minimum Heat Index (Day 3)

CLICK ON A CITY CODE FOR A TABLE OF FORECAST VALUES



Example 4: Forecast Probability of Minimum Heat Index >75 F (Day 3)

4. Day 3-7 Mean Heat Index Probability Forecast Graphics

4.1 Mission Connection

WPC issues probabilistic daily mean Heat Index forecast graphics for days 3 through 7 as guidance to CONUS NWS field offices and the general meteorological community (private sector and the media). These products support the NWS excessive heat outlook services by providing early indications of significant heat related events and are issued in probabilistic form to better represent the forecast uncertainty associated with a particular event.

4.2 Issuance Guidelines

4.2.1 Creation Software

WPC uses N-AWIPS software to generate these products.

4.2.2 Issuance Criteria

These are routine, schedule-driven products issued for days 3 through 7.

4.2.3 Issuance Time

Refer to Table 3.

4.2.4 Valid Time

Refer to Table 3.

<i>WPC Day 3-7 Mean Heat Index Probability Forecast Graphics Product Schedule</i>					
<i>Issuance Time (UTC)</i>	<i>Valid Time</i>	<i>AWIPS ID</i>	<i>WMO Header</i>	<i>Mean Heat Index Thresholds (%)</i>	<i>Product Description</i>
0430 1630	Day 3	RBG385 RBG390 RGB395	PTNK98 KWNH PTNK98 KWNH PTNK98 KWNH	Chance > 85F Chance > 90F Chance > 95F	Day 3 probabilities of daily mean Heat Index exceeding predetermined thresholds
0430 1630	Day 4	RBG485 RBG490 RGB495	PTNM98 KWNH PTNM98 KWNH PTNM98 KWNH	Chance > 85F Chance > 90F Chance > 95F	Day 4 probabilities of daily mean Heat index exceeding predetermined thresholds
0430 1630	Day 5	RBG585 RBG590 RGB595	PTNO98 KWNH PTNO98 KWNH PTNO98 KWNH	Chance > 85F Chance > 90F Chance > 95F	Day 5 probabilities of daily mean Heat Index exceeding predetermined thresholds
0430 1630	Day 6	RBG685 RBG690 RGB695	PTNQ98 KWNH PTNQ98 KWNH PTNQ98 KWNH	Chance > 85F Chance > 90F Chance > 95F	Day 6 probabilities of daily mean Heat Index exceeding predetermined thresholds
0430 1630	Day 7	RBG785 RBG790 RGB795	PTNS98 KWNH PTNS98 KWNH PTNS98 KWNH	Chance > 85F Chance > 90F Chance > 95F	Day 7 probabilities of daily mean Heat Index exceeding predetermined thresholds

Table 3. Probabilistic mean Heat Index forecast graphic issuance and valid times.

4.2.5 Product Expiration Time

Product expires after the next issuance at either 0430 or 1630 UTC.

4.3 Technical Description

Charts should follow the format and content described in this section.

4.3.1 Universal Geographic Code Type

Not applicable.

4.3.2 Mass News Disseminator Broadcast Instruction Line

Not applicable.

4.3.3 Mass News Disseminator Product Type Line

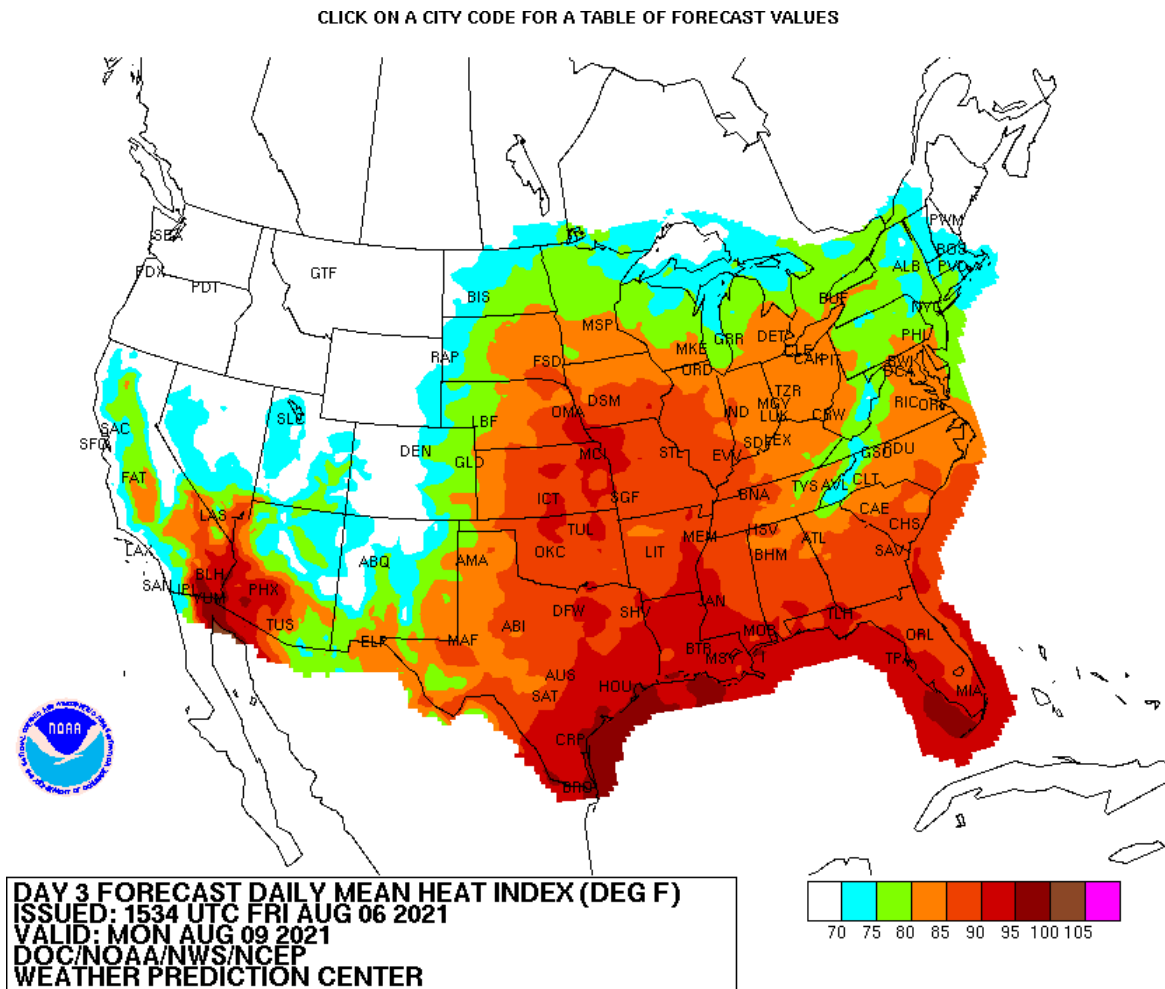
Not applicable.

4.3.4 Content

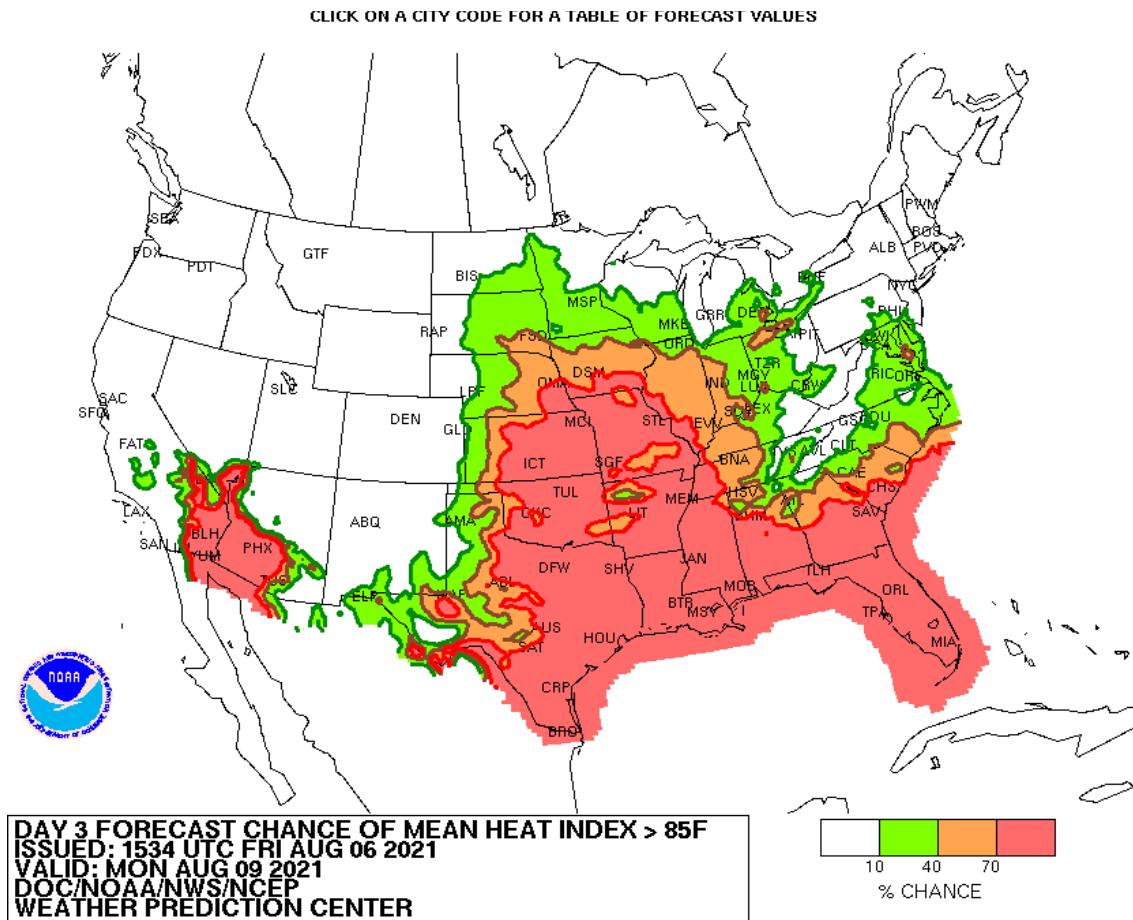
A graphical product that depicts the probabilities of daily mean Heat Index (shaded contours) exceeding predetermined threshold values within the CONUS for days 3 through 7. The shaded contours indicate the probability (e.g., 10%, 40%, 70%) that a location within the shaded area will receive greater than or equal to a daily mean heat index of 85 F, 90 F or 95 F respectively.

4.3.5 Format Examples

Examples 5 and 6 below show Graphical forecasts of Day 3 mean Heat Index and probabilities of mean Heat Index exceeding 85 F, respectively.



Example 5: Forecast Daily Mean Heat Index (Day 3)



Example 6: Probabilistic Mean Heat Index >85 F (Day 3)

4.4 Updates, Amendments, and Corrections

Products are not updated or amended. Corrections are issued when necessary.

5. Day 3-7 Heat Index Probability Forecast Text

5.1 Mission Connection

WPC issues an alphanumeric text product displaying probabilistic daily maximum, minimum and mean Heat Index forecasts for days 3 through 7 as guidance to CONUS NWS field offices and the general meteorological community (private sector and the media). These products support the NWS excessive heat outlook services by providing early indications of significant heat related events and are issued in probabilistic form to better represent the forecast uncertainty associated with a particular event.

5.2 Issuance Guidelines

5.2.1 Creation Software

WPC uses N-AWIPS software to generate these products.

5.2.2 Issuance Criteria

These are routine, schedule-driven products issued for days 3 through 7.

5.2.3 Issuance Time

Refer to Table 4.

5.2.4 Valid Time

Refer to Table 4.

<i>WPC Day 3-7 Heat Index Probability Forecast Text Product Schedule</i>				
<i>Issuance Time (UTC)</i>	<i>Valid Time</i>	<i>AWIPS ID</i>	<i>WMO Header</i>	<i>Product Description</i>
0430 1630	Day 3-7	PRBEHH	FMUS23 KWNH	Day 3-7 probabilities of daily maximum heat index exceeding predetermined thresholds for eastern U.S. cities
0430 1630	Day 3-7	PRBWHH	FMUS24 KWNH	Day 3-7 probabilities of daily maximum heat index exceeding predetermined thresholds for western U.S. cities
0430 1630	Day 3-7	PRBEHL	FMUS23 KWNH	Day 3-7 probabilities of daily minimum heat index exceeding predetermined thresholds for eastern U.S. cities
0430 1630	Day 3-7	PRBWHL	FMUS24 KWNH	Day 3-7 probabilities of daily minimum heat index exceeding predetermined thresholds for western U.S. cities
0430 1630	Day 3-7	PRBEHI	FMUS23 KWNH	Day 3-7 probabilities of daily mean heat index exceeding predetermined thresholds for eastern U.S. cities
0430 1630	Day 3-7	PRBWHI	FMUS24 KWNH	Day 3-7 probabilities of daily mean heat index exceeding predetermined thresholds for western U.S. cities

Table 4. Probabilistic Heat Index forecast graphic issuance and valid times.

5.2.5 Product Expiration Time

Product expires after the next issuance at either 0430 or 1630 UTC.

5.3 Technical Description

The Heat Index alphanumeric products follow the format and content described in this section.

5.3.1 Universal Geographic Code Type

Not applicable.

5.3.2 Mass News Disseminator Broadcast Instruction Line

Not applicable.

5.3.3 Mass News Disseminator Product Type Line

The MND line is “DAYS 3-7 HEAT INDEX FORECAST TABLES.”

5.3.4 Content

This tabular text forecast product provides 3 to 7 day forecasts of daily maximum, daily minimum and daily mean Heat Index values and the probability (%) of that Heat Index parameter exceeding 70, 75, 80, 85, 90, 95, and 100 degree F thresholds, except 80, 85, 90, 95, 100, 105, 110, and 115 degrees F for the maximum.

5.3.5 Format Examples

Figures 7, 8 and 9 below show product formats for the tabular daily maximum, daily minimum and daily mean Heat Index probability forecasts, respectively.

<u>Product Format</u>						<u>Description of Entry</u>
MEMPHIS_TN						(Name of City)
CHS	0831	0901	0902	0903	0904	(Location & Day 3 to 7 Date Label)
MAX	95	99	101	97	94	(Daily Max Heat Index forecast - MAX)
%>115	0	0	0	0	0	(% probability of MAX exceeding 115 F)
%>110	0	2	4	0	1	(% probability of MAX exceeding 110 F)
%>105	2	13	20	2	6	(% probability of MAX exceeding 105 F)
%>100	13	42	54	24	21	(% probability of MAX exceeding 100 F)
%>95	41	77	86	74	47	(% probability of MAX exceeding 95 F)
%>90	75	95	98	97	75	(% probability of MAX exceeding 90 F)
%>85	94	99	100	100	92	(% probability of MAX exceeding 85 F)
%>80	99	100	100	100	98	(% probability of MAX exceeding 80 F)

Figure 7. Product Format for a Tabular Maximum Heat Index Probability Forecast.

<u>Product Format</u>						<u>Description of Entry</u>
MIAMI_FL						(Name of City)
CAK	0831	0901	0902	0903	0904	(Location & Day 3 to 7 Date Label)
MIN	80	81	82	82	81	(Daily Min Heat Index forecast - MIN)
%>100	0	0	0	0	0	(% probability of MIN exceeding 100 F)
%>95	0	0	0	0	0	(% probability of MIN exceeding 95 F)
%>90	0	2	3	2	1	(% probability of MIN exceeding 90 F)
%>85	6	16	21	16	14	(% probability of MIN exceeding 85 F)
%>80	44	61	69	66	62	(% probability of MIN exceeding 80 F)
%>75	96	98	98	98	99	(% probability of MIN exceeding 75 F)
%>70	100	100	100	100	100	(% probability of MIN exceeding 70 F)

Figure 8. Product Format for a Tabular Minimum Heat Index Probability Forecast.

<u>Product Format</u>						<u>Description of Entry</u>
AKRON-CANTON						(Name of City)
CAK	0527	0528	0529	0530	0531	(Location & Day 3 to 7 Date Label)
MHI	67	69	68	69	69	(Daily Mean Heat Index forecast - MHI)
%>100	0	0	0	0	0	(% probability of MHI exceeding 100 F)
%>95	0	0	0	0	0	(% probability of MHI exceeding 95 F)
%>90	0	0	0	0	0	(% probability of MHI exceeding 90 F)
%>85	0	0	0	0	0	(% probability of MHI exceeding 85 F)
%>80	0	0	0	0	0	(% probability of MHI exceeding 80 F)
%>75	1	6	5	6	11	(% probability of MHI exceeding 75 F)
%>70	19	41	33	36	42	(% probability of MHI exceeding 70 F)

Figure 9. Product Format for a Tabular Mean Heat Index Probability Forecast.

5.4 Updates, Amendments, and Corrections

Products are not updated or amended. Corrections are issued when necessary.

6. Air Quality Forecast Guidance

6.1 Mission Connection

NOAA/NWS Air Quality Forecast Guidance is issued to support the National Air Quality Forecast Capability, which provides the U.S. with ozone, smoke, particulate matter and dust forecasts guidance with enough accuracy and advance notice to take action to prevent or eliminate adverse effects to people at risk. The forecasts are web-based presentations of gridded forecast guidance originating from NCEP's EMC. Complete information on this guidance is online at <https://vlab.noaa.gov/web/osti-modeling/air-quality>.

6.2 Issuance Guidelines

6.2.1 Creation Software

Air Quality Forecast Guidance is produced from the NOAA/Environmental Protection Agency (EPA) Community Multiscale Air Quality (CMAQ) model driven by NOAA's operational Global Forecast System Weather Prediction model (GFS).

6.2.2 Issuance Criteria

These are routine, schedule-driven products issued for a period of 24 to 72 hours.

6.2.3 Issuance Time

Refer to Table 5.

6.2.4 Valid Time

Refer to Table 5.

<i>Air Quality Forecast Guidance</i>			
<i>Issuance Time (UTC)</i>	<i>Valid Time</i>	<i>WMO Header</i>	<i>Product Description</i>
0600 & 1200	Days 1-3 (out to 72 hours)	LYUZ99 KWBP	Air Quality Ozone Forecast Guidance as 1-hour ozone concentration (in parts per billion or ppb) averages for the contiguous U.S. (CONUS)
0600 & 1200	Days 1-3 (out to 72 hours)	LZUZ99 KWBP	Air Quality Ozone Forecast Guidance as 8-hour ozone concentration (in parts per billion or ppb) averages for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	LIOZ99 KWBP	Air Quality Ozone Daily Maximum Forecast Guidance as 1-hour ozone concentration (in parts per billion or ppb) averages for the 24-hour period for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	LJOZ99 KWBP	Air Quality Ozone Daily Maximum Forecast Guidance as the maximum 8-hour ozone concentration (in parts per billion or ppb) averages for the 24-hour period for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	LNSZ99 KWBP	Air Quality Ozone Forecast Guidance as 1-hour ozone concentration (in parts per billion or ppb) averages for Hawaii
0600 & 1200	Days 1-3 (out to 72 hours)	LOSZ99 KWBP	Air Quality Ozone Forecast Guidance as 8-hour ozone concentration (in parts per billion or ppb) averages for Hawaii
0600 & 1200	Days 1-3 (out to 72 hours)	LURZ99 KWBP	Air Quality Ozone Daily Maximum Forecast Guidance as 1-hour ozone concentration (in parts per billion or ppb) averages for the 24-hour period for Hawaii
0600 & 1200	Days 1-3 (out to 72 hours)	LVRZ99 KWBP	Air Quality Ozone Daily Maximum Forecast Guidance as 8-hour ozone concentration (in parts per billion or ppb) averages for the 24-hour period for Hawaii
0600 & 1200	Days 1-3 (out to 72 hours)	LNRZ99 WKBP	Air Quality Ozone Forecast Guidance as 1-hour ozone concentration (in parts per billion or ppb) averages for Alaska
0600 & 1200	Days 1-3 (out to 72 hours)	LORZ99 WKBP	Air Quality Ozone Forecast Guidance as 8-hour ozone concentration (in parts per billion or ppb) averages for Alaska
0600 & 1200	Days 1-3 (out to 72 hours)	LUSZ99 KWBP	Air Quality Ozone Daily Maximum Forecast Guidance as 1-hour ozone concentration (in parts per billion or ppb) averages for the 24-hour period for Alaska
0600 & 1200	Days 1-3 (out to 72 hours)	LVSZ99 KWBP	Air Quality Ozone Daily Maximum Forecast Guidance as 8-hour ozone concentration (in parts per billion or ppb) averages for the 24-hour period for Alaska
0600	Days 1-2 (out to 48 hours)	LXQZ99 KWBP	Air Quality Smoke Forecast Guidance as 1-hour average surface smoke, defined as the surface smoke concentration, in micrograms per cubic meter, backward averaged over 1 hour for the CONUS.

0600	Days 1-2 (out to 48 hours)	LWQZ99 KWBP	Air Quality Smoke Forecast Guidance as 1-hour average smoke integration, defined as the average column-integrated smoke concentration, in micrograms per cubic meter, backward averaged over 1 hour for the CONUS.
0600	Days 1-2 (out to 48 hours)	LXRZ99 KWBP	Air Quality Smoke Forecast Guidance as 1-hour average surface smoke, defined as the surface smoke concentration, in micrograms per cubic meter, backward averaged over 1 hour for Alaska.
0600	Days 1-2 (out to 48 hours)	LWRZ99 KWBP	Air Quality Smoke Forecast Guidance as 1-hour vertically integrated smoke, defined as the average column-integrated smoke concentration, in micrograms per cubic meter, backward averaged over 1 hour, for Alaska.
0600	Days 1-2 (out to 48 hours)	LXSZ99 KWBP	Air Quality Smoke Forecast Guidance as 1-hour average surface smoke, defined as the surface smoke concentration, in micrograms per cubic meter, backward averaged over 1 hour for Hawaii
0600	Days 1-2 (out to 48 hours)	LWSZ99 KWBP	Air Quality Smoke Forecast Guidance as 1-hour vertically integrated smoke, defined as the average column-integrated smoke concentration, in micrograms per cubic meter, backward averaged over 1 hour, for Hawaii
0600 & 1200	Days 1-2 (out to 48 hours)	LAPZ99 KWBP	Air Quality Dust Forecast Guidance as 1-hour average surface dust, defined as the surface dust concentration, in micrograms per cubic meter, backward averaged over 1 hour for CONUS
0600 & 1200	Days 1- 2 (out to 48 hours)	LDPZ99 KWBP	Air Quality Dust Forecast Guidance as 1-hour average vertically integrated dust, defined as the vertically integrated dust concentration, in micrograms per cubic meter, backward averaged over 1 hour for CONUS
0600 & 1200	Days 1- 3 (out to 72 hours)	LGPZ99 KWBP	Air Quality Forecast Guidance as 24-hour Mean PM25 Concentration, in micrograms per cubic meter, for Hawaii
0600 & 1200	Days 1- 3 (out to 72 hours)	LIPZ99 KWBP	Air Quality Forecast Guidance as 24-hour Mean Bias Corrected PM25 Concentration for the CONUS
0600 & 1200	Days 1- 3 (out to 72 hours)	LKOZ99 KWBP	Air Quality Forecast Guidance as Daily Max 1-hour PM25 Concentration for Hawaii
0600 & 1200	Days 1- 3 (out to 72 hours)	LNOZ99 KWBP	Air Quality Forecast Guidance as 1-hour PM25 Concentration for Hawaii

0600 & 1200	Days 1-3 (out to 72 hours)	LNPZ99 KWB	Air Quality Forecast Guidance as Daily Max 1-hour Bias Corrected PM25 Concentration for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	LOPZ99 KWB	Air Quality Forecast Guidance as 1-hour Bias Corrected PM25 Concentration for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	LWPZ99 KWB	Air Quality Forecast Guidance as 24-hour Mean PM25 Concentration for Alaska
0600 & 1200	Days 1-3 (out to 72 hours)	LXPZ99 KWB	Air Quality Forecast Guidance as Daily Max 1-hour PM25 Concentration for Alaska
0600 & 1200	Days 1-3 (out to 72 hours)	LYPZ99 KWB	Air Quality Forecast Guidance as 1-hour PM25 Concentration for Alaska
0600 & 1200	Days 1-3 (out to 72 hours)	LYQZ99 KWB	Air Quality Forecast Guidance as 24-hour Mean PM25 Concentration for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	LZPZ99 KWB	Air Quality Forecast Guidance as Daily Max 1-hour PM25 Concentration for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	LZQZ99 KWB	Air Quality Forecast Guidance as 1-hour PM25 Concentration for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	YBPZ99 KWB	Air Quality Forecast Guidance as 1-hour Bias Corrected Ozone Concentration for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	YCPZ99 KWB	Air Quality Forecast Guidance as Daily Max 8-hour Bias Corrected Ozone Concentration for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	YFPZ99 KWB	Air Quality Forecast Guidance as Daily Max 1-hour Bias Corrected Ozone Concentration for the CONUS
0600 & 1200	Days 1-3 (out to 72 hours)	YHPZ99 KWB	Air Quality Forecast Guidance as 8-hour Bias Corrected Ozone Concentration for the CONUS

Table 5. Air Quality Forecast Guidance, Graphics and Valid Times.**6.2.5 Product Expiration Time**

Product expires after the next issuance at either 0600 or 1200 UTC.

6.3 Technical Description

The Air Quality ozone, PM2.5 (particulate matter), smoke, and dust alphanumeric products follow the format and content described in this section.

6.3.1 Universal Geographic Code Type

Not applicable.

6.3.2 Mass News Disseminator Broadcast Instruction Line

Not applicable.

6.3.3 Mass News Disseminator Product Type Line

Not applicable.

6.3.4 Content

- a. Ozone. Graphical and tabular forecast products that provide ozone data displayed for domain covering CONUS, Alaska, and Hawaii for 1-hour and 8-hour averages as well as daily maximum of 1-hour and 8-hour averages extending out to 72 hours. It is intended for use by the general public, state and local agency forecasters, the media and private sector meteorologists. Data are posted as graphic images to NOAA and EPA web sites per interagency agreement.
- b. Smoke. Graphical and tabular forecast products that provide smoke data displayed for domains covering CONUS, Alaska, and Hawaii for 1-hour surface smoke concentration, and the 1-hour average vertical smoke integration, extending out to 48 hours. It is intended for use by the general public, state and local agency forecasters, the media and private sector meteorologists. Data are posted as graphic images to NOAA web.
- c. Dust. Graphical and tabular forecast products that provide dust data displayed for a domain covering the CONUS for 1-hr surface dust concentration, and the one-hour average vertical dust integration, extending out to 48 hours. It is intended for use by the general public, state and local agency forecasters, the media and private sector meteorologists. Data are posted as graphic images to NOAA web sites.
- d. PM 2.5. Graphical and tabular forecast products that provide PM 2.5 data displayed for domain covering CONUS, Alaska, and Hawaii for 1-hour and 8-hour averages as well as daily maximum of 1-hour and 8-hour averages extending out to 72 hours. It is intended for use by the general public, state and local agency forecasters, the media and private sector meteorologists. Data are posted as graphic images to NOAA and EPA web sites per interagency agreement.

6.3.5 Format Examples

Figures 10-17 show various graphical and tabular Ozone, Smoke and Dust products as shown below.

6.3.5.1 Graphical Air Quality Ozone Forecast Guidance

NWS National Air Quality Forecast Capability (NAQFC):
<https://airquality.weather.gov/>

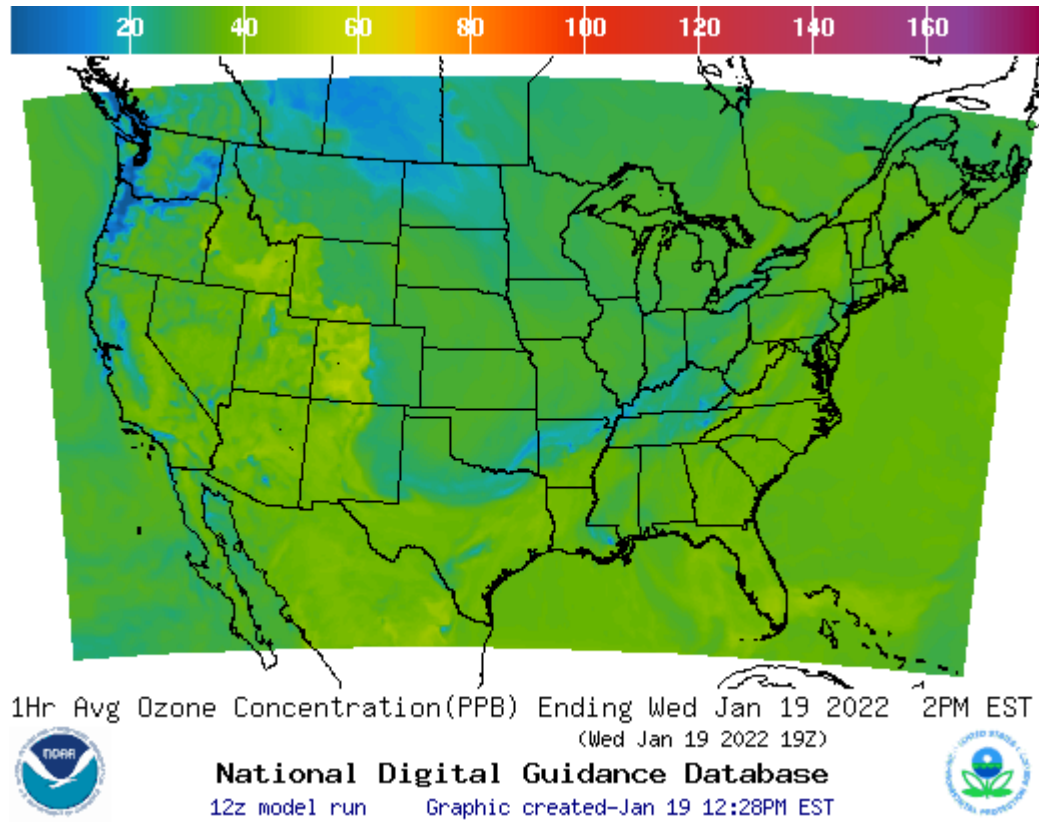


Figure 10. Graphical Air Quality Ozone Forecast Guidance (Average Ozone Concentration for the CONUS in Parts per Billion (PPB) backward averaged over 1 hour)

6.3.5.2 Graphical Air Quality Ozone Daily Maximum Forecast Guidance

Found at <https://airquality.weather.gov/>

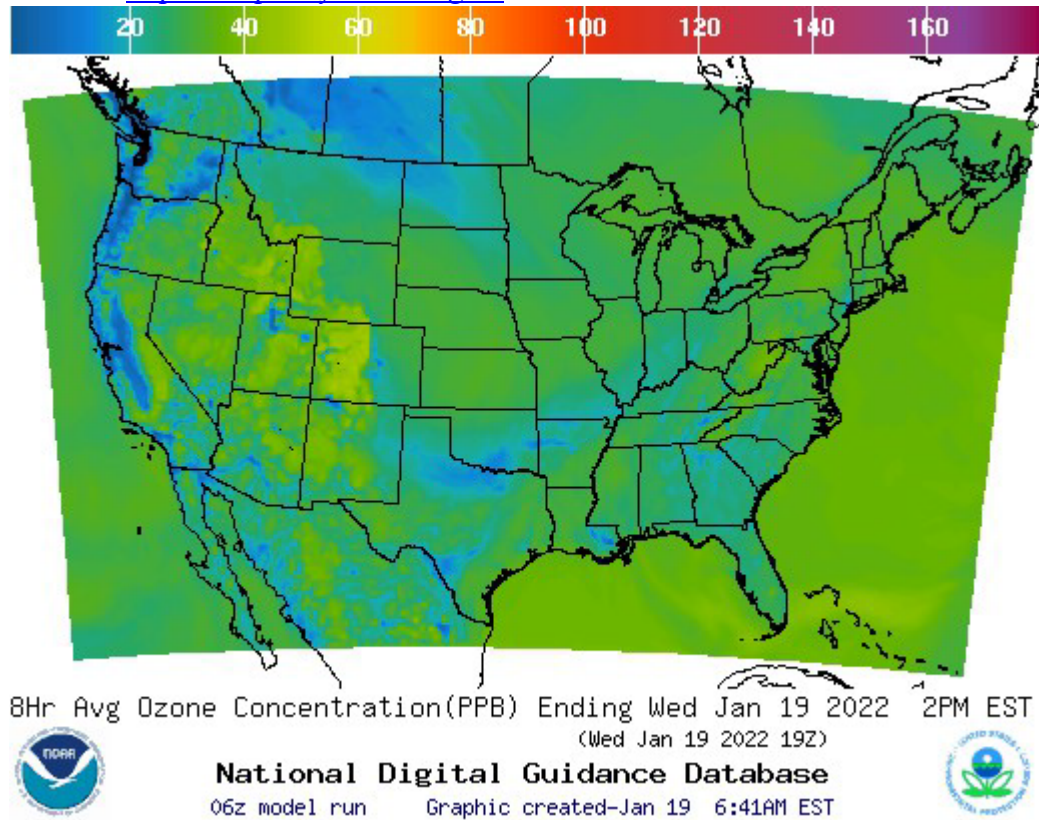


Figure 11. Graphical Air Quality Daily Maximum Ozone Forecast Guidance (Average Ozone Concentration for the CONUS in Parts per Billion (PPB) backward averaged over 8 hours)

6.3.5.3 Graphical Air Quality Surface Smoke Forecast Guidance

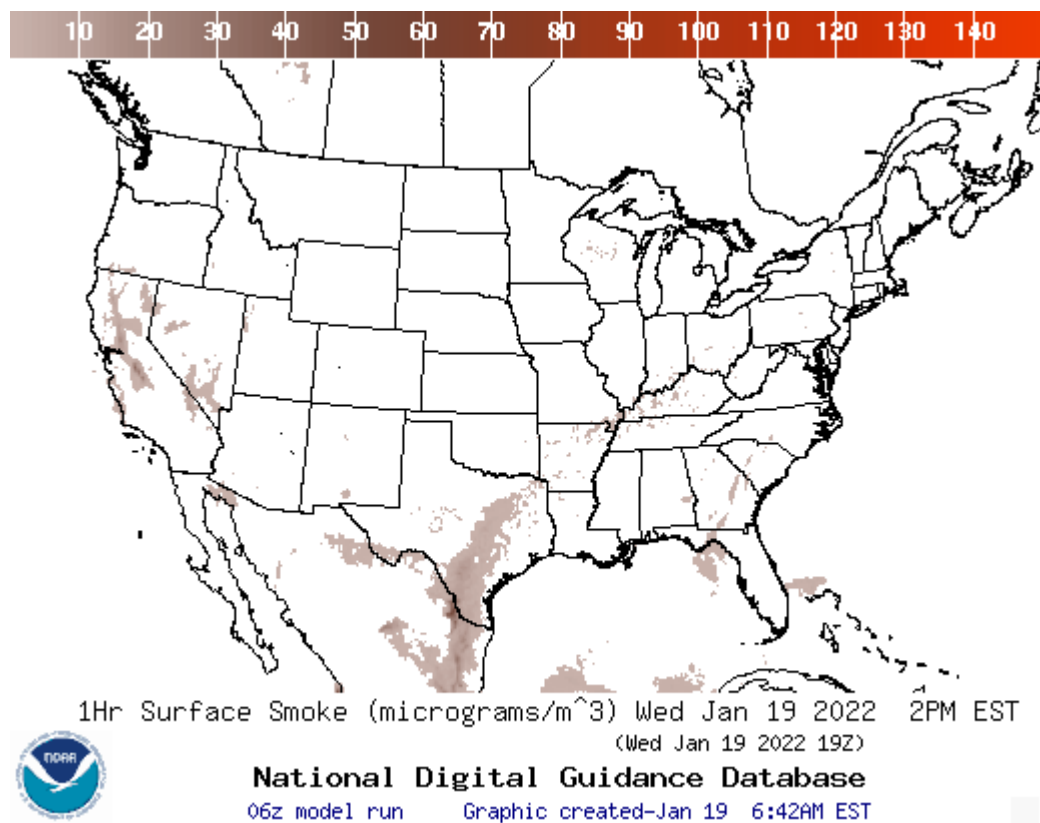


Figure 12. Graphical 1-hour Average Surface Smoke (the surface smoke concentration for the CONUS, in micrograms per cubic meter, backward averaged over 1 hour).

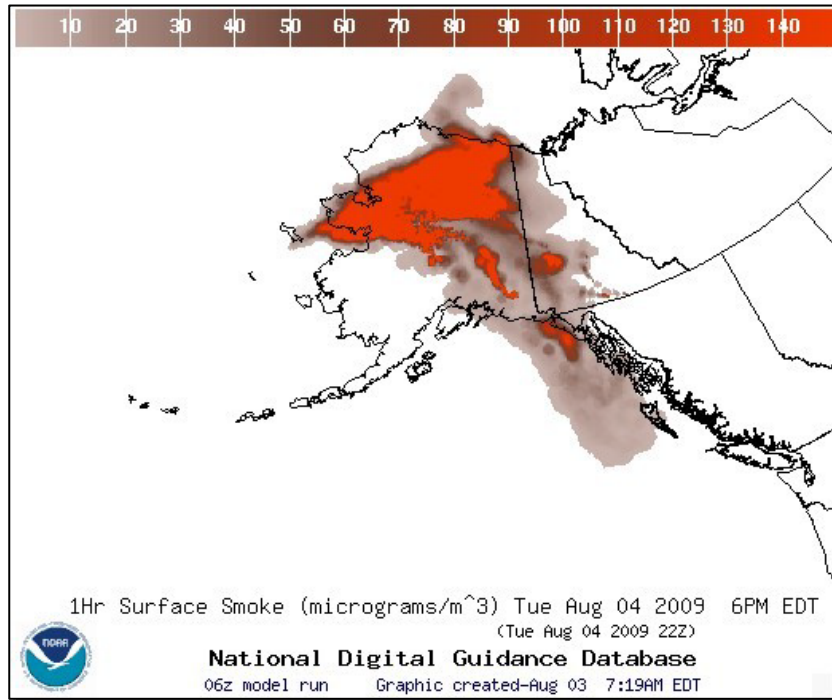


Figure 13. Graphical 1-hour Average Surface Smoke (the surface smoke concentration for Alaska, in micrograms per cubic meter, backward averaged over 1 hour).

6.3.5.4 Graphical Air Quality Smoke Integration Forecast Guidance

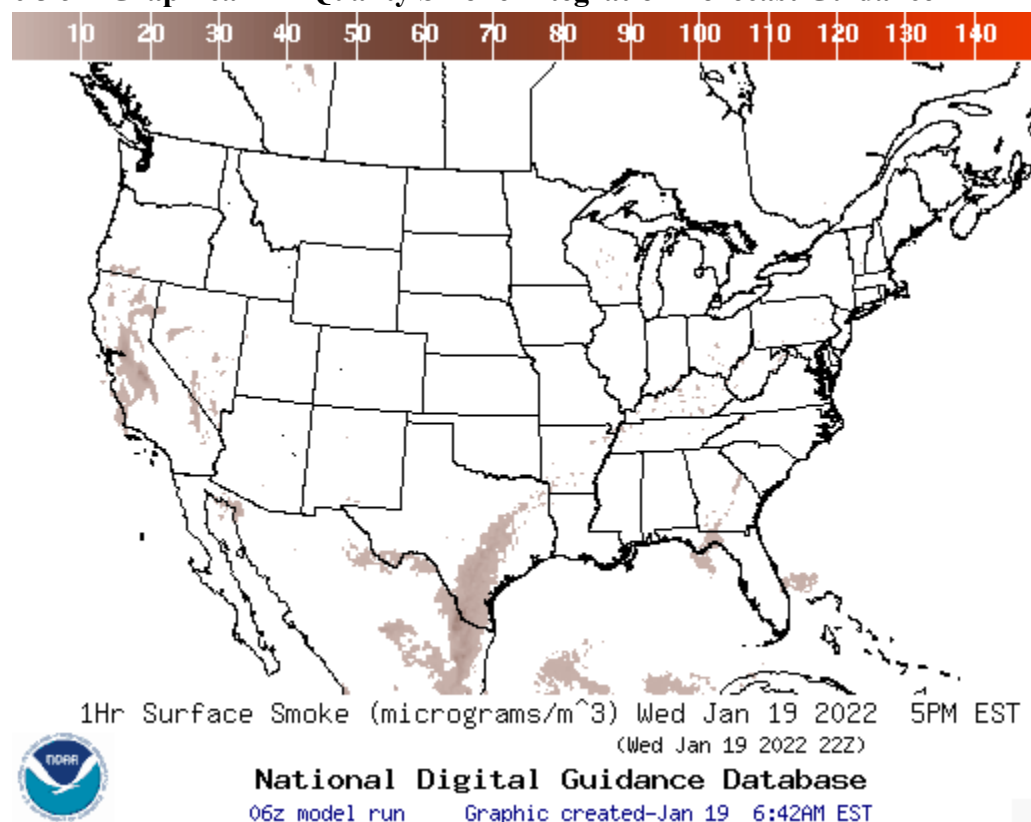


Figure 14. Graphical 1-hour Average Smoke Integration (the average column-integrated smoke concentration for the CONUS in micrograms per cubic meter, backward averaged over 1 hour)

6.3.5.5 Graphical Air Quality Surface Dust Forecast Guidance

Found at <https://airquality.weather.gov/>

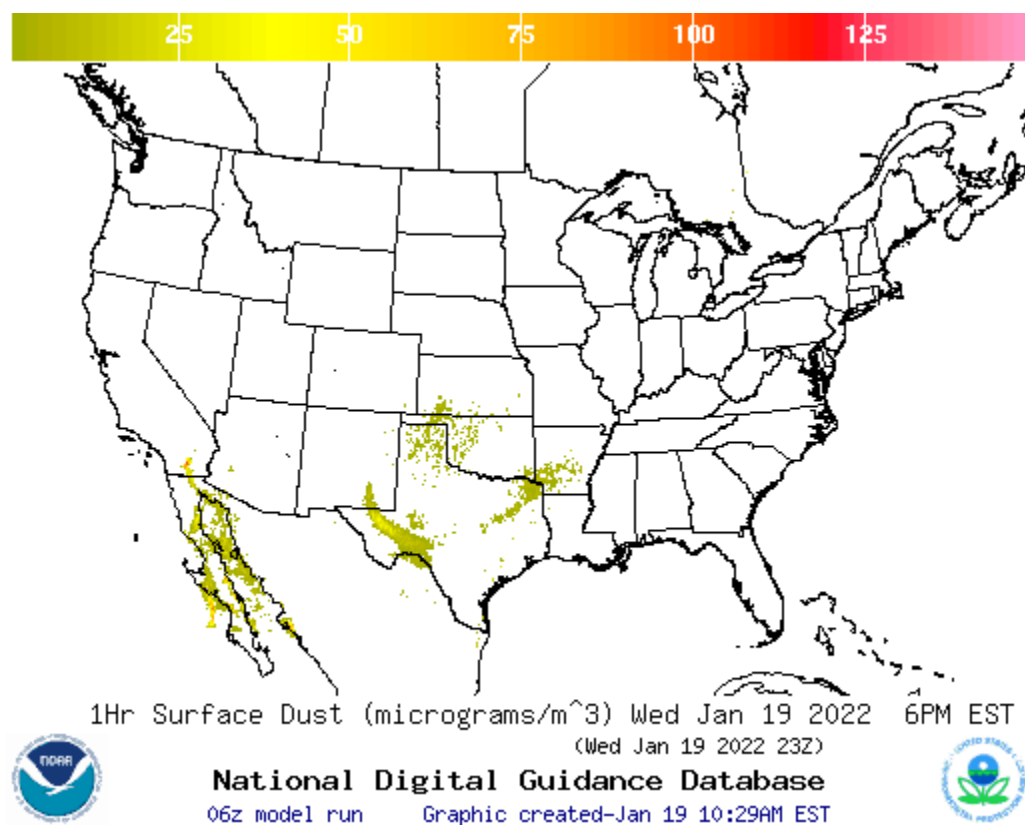


Figure 15. Graphical 1-hour Average Surface Dust (the surface dust concentration for the CONUS in micrograms per cubic meter, backward averaged over 1 hour)

6.3.5.6 Graphical Air Quality Dust Integration Forecast Guidance

Found at <https://airquality.weather.gov/>

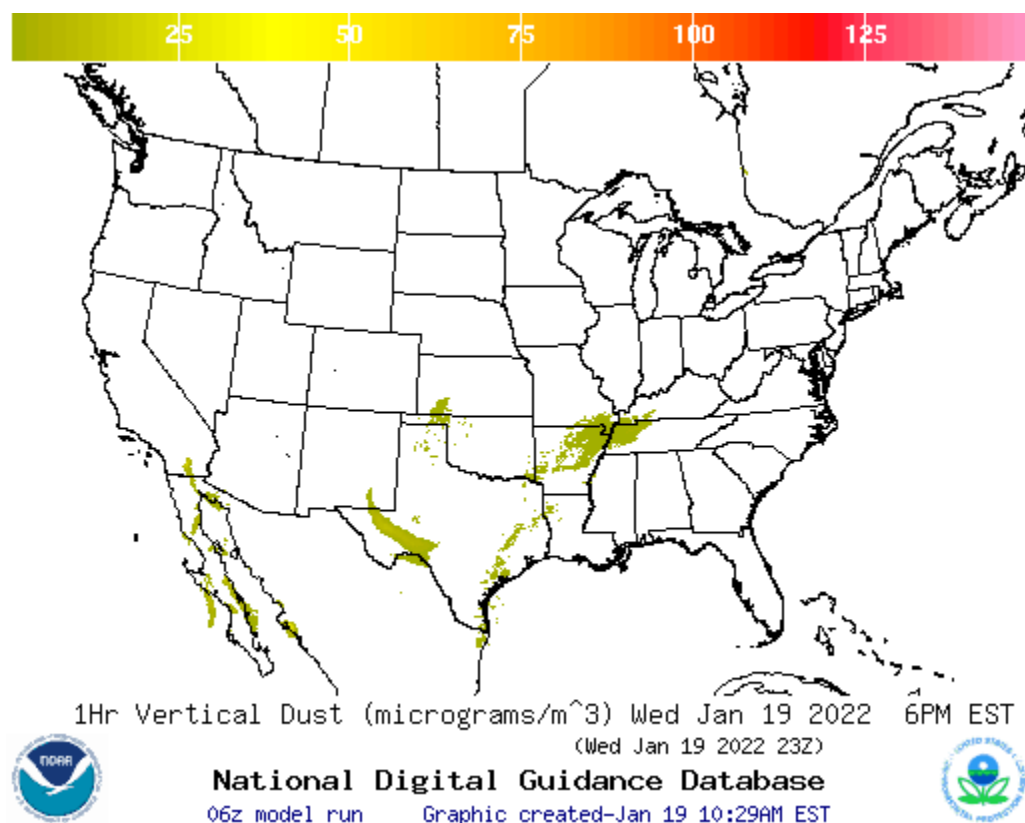


Figure 16. Graphical 1-hour Average Dust Integration (the average column-integrated dust concentration for the CONUS in micrograms per cubic meter, backward averaged over 1 hour)

6.3.5.7 Tabular Air Quality Forecast Guidance

Found at <https://airquality.weather.gov/>

		Daily Maximum Ending	Maximum 1 Hour Average Ozone Concentration (PPB)	Maximum 8 Hour Average Ozone Concentration (PPB)	
		Today	44	40	
		Tomorrow	39	37	

Ozone Ending Time (Local Time)	1 Hour Average Ozone Concentration (PPB) 12Z Model Run	8 Hour Average Ozone Concentration (PPB) 12Z Model Run	Smoke Ending Time (Local Time)	1 Hour Surface Smoke (µg/m³) 06Z Model Run	1 Hour Column-Integrated Smoke (µg/m³) 06Z Model Run
Wed, Dec 09 04 PM	42	39	Wed, Dec 09 04 PM	0	0
Wed, Dec 09 05 PM	40	40	Wed, Dec 09 05 PM	0	0
Wed, Dec 09 06 PM	37	40	Wed, Dec 09 06 PM	0	0
Wed, Dec 09 07 PM	35	40	Wed, Dec 09 07 PM	0	0
Wed, Dec 09 08 PM	33	39	Wed, Dec 09 08 PM	0	0
Wed, Dec 09 09 PM	32	38	Wed, Dec 09 09 PM	0	0
Wed, Dec 09 10 PM	30	37	Wed, Dec 09 10 PM	0	0
Wed, Dec 09 11 PM	30	35	Wed, Dec 09 11 PM	0	0
Thu, Dec 10 12 AM	29	33	Thu, Dec 10 12 AM	1	0
Thu, Dec 10 01 AM	28	32	Thu, Dec 10 01 AM	2	0
Thu, Dec 10 02 AM	27	30	Thu, Dec 10 02 AM	3	0
Thu, Dec 10 03 AM	27	29	Thu, Dec 10 03 AM	2	0
Thu, Dec 10 04 AM	26	29	Thu, Dec 10 04 AM	2	0
Thu, Dec 10 05 AM	26	28	Thu, Dec 10 05 AM	1	0
Thu, Dec 10 06 AM	26	27	Thu, Dec 10 06 AM	0	0
Thu, Dec 10 07 AM	27	27	Thu, Dec 10 07 AM	0	0
Thu, Dec 10 08 AM	30	27	Thu, Dec 10 08 AM	0	0
Thu, Dec 10 09 AM	33	28	Thu, Dec 10 09 AM	0	0
Thu, Dec 10 10 AM	35	29	Thu, Dec 10 10 AM	0	0
Thu, Dec 10 11 AM	36	30	Thu, Dec 10 11 AM	0	0
Thu, Dec 10 12 PM	37	31	Thu, Dec 10 12 PM	0	0
Thu, Dec 10 01 PM	37	33	Thu, Dec 10 01 PM	0	0
Thu, Dec 10 02 PM	38	34	Thu, Dec 10 02 PM	0	0
Thu, Dec 10 03 PM	38	36	Thu, Dec 10 03 PM	0	0
Thu, Dec 10 04 PM	39	37	Thu, Dec 10 04 PM	0	0
Thu, Dec 10 05 PM	36	37	Thu, Dec 10 05 PM	0	0
Thu, Dec 10 06 PM	33	37	Thu, Dec 10 06 PM	0	0
Thu, Dec 10 07 PM	31	36	Thu, Dec 10 07 PM	0	0
Thu, Dec 10 08 PM	29	35	Thu, Dec 10 08 PM	0	0
Thu, Dec 10 09 PM	28	34	Thu, Dec 10 09 PM	0	0
Thu, Dec 10 10 PM	28	33			
Thu, Dec 10 11 PM	28	32			
Fri, Dec 11 12 AM	29	30			
Fri, Dec 11 01 AM	29	29			
Fri, Dec 11 02 AM	29	29			
Fri, Dec 11 03 AM	28	28			
Fri, Dec 11 04 AM	28	28			

Figure 17. National Air Quality Forecast Guidance values for Logandale, NV (latitude: 36.60 N, longitude: 114.53 W). Ozone concentrations are presented in parts per billion (PPB). Smoke concentrations are presented in micrograms per cubic meter.

APPENDIX A National Non-Precipitation Product Examples

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1. Introduction

This section contains examples of national non-precipitation weather products.

2. Probabilistic Day 3-7 Maximum Heat Index Forecast - Eastern U.S. (PRBEHH).

FMUS23 KWNH 161542

PRBEHH

DAYS 3--7 HEAT INDEX FORECAST TABLES

NWS WEATHER PREDICTION CENTER COLLEGE PARK MD

1538 UTC MON AUG 16 2021

MAXIMUM HEAT INDEX (DEG F) AND MAXIMUM HI PROB (%) FRCSTS
AT EASTERN US CITIES - DAYS 3 TO 7 FROM MON AUG 16 2021

AKRON-CANTON_OH						ALBANY_NY					
CAK	0819	0820	0821	0822	0823	ALB	0819	0820	0821	0822	0823
MAX	85	87	89	83	85	MAX	84	88	90	90	83
%>110	0	0	0	0	0	%>110	1	2	0	1	0
%>105	0	0	2	0	0	%>105	3	6	2	4	0
%>100	0	1	7	0	1	%>100	7	13	9	12	1
%>95	4	5	21	2	6	%>95	16	25	25	28	4
%>90	20	26	43	11	20	%>90	29	41	49	50	15
%>85	53	63	68	38	48	%>85	46	60	75	73	38
%>80	84	91	87	72	76	%>80	65	77	92	89	66

ASHEVILLE_NC						ATLANTA_GA					
AVL	0819	0820	0821	0822	0823	ATL	0819	0820	0821	0822	0823
MAX	81	80	82	85	84	MAX	95	93	96	99	98
%>110	0	0	0	0	0	%>110	0	0	0	1	0
%>105	1	1	1	0	0	%>105	0	1	1	7	5
%>100	2	3	2	2	1	%>100	10	8	15	37	35
%>95	6	8	8	8	5	%>95	56	33	58	79	80
%>90	15	17	19	23	17	%>90	94	71	92	97	98
%>85	33	32	38	48	43	%>85	100	94	100	100	100
%>80	54	51	60	73	71	%>80	100	99	100	100	100

BALTIMORE_MD						BIRMINGHAM_AL					
BWI	0819	0820	0821	0822	0823	BHM	0819	0820	0821	0822	0823
MAX	91	92	93	94	88	MAX	93	93	97	100	102

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%>110	0	0	0	0	0	%>110	0	0	0	2	16
%>105	1	2	2	3	0	%>105	2	3	1	18	36
%>100	8	10	11	15	3	%>100	12	13	19	54	62
%>95	27	30	35	44	14	%>95	40	37	68	87	83
%>90	59	59	68	76	39	%>90	74	69	95	98	95
%>85	86	84	91	94	70	%>85	93	90	100	100	99
%>80	97	96	99	99	91	%>80	99	98	100	100	100

BOSTON_MA						BUFFALO_NY					
BOS	0819	0820	0821	0822	0823	BUF	0819	0820	0821	0822	0823
MAX	85	85	84	85	81	MAX	87	86	89	84	81
%>110	0	0	0	0	0	%>110	0	0	0	0	0
%>105	1	2	1	1	0	%>105	2	0	2	0	0
%>100	4	5	4	4	1	%>100	6	1	8	1	0
%>95	12	14	11	13	4	%>95	16	6	23	6	2
%>90	28	29	26	29	13	%>90	34	25	47	19	10
%>85	49	49	45	51	30	%>85	57	61	72	43	28
%>80	72	71	67	73	54	%>80	78	88	90	70	56

CHARLESTON_SC						CHARLESTON_WV					
CHS	0819	0820	0821	0822	0823	CRW	0819	0820	0821	0822	0823
MAX	101	104	104	106	104	MAX	89	88	91	90	90
%>110	1	13	8	28	19	%>110	0	0	0	0	0
%>105	18	42	40	55	43	%>105	0	0	2	1	1
%>100	63	76	81	80	69	%>100	3	2	10	6	4
%>95	93	94	97	94	88	%>95	16	12	28	21	19
%>90	100	99	100	99	97	%>90	42	38	56	47	48
%>85	100	100	100	100	100	%>85	73	71	82	74	78
%>80	100	100	100	100	100	%>80	92	92	95	92	94

CHARLOTTE_NC						CHICAGO_IL					
CLT	0819	0820	0821	0822	0823	ORD	0819	0820	0821	0822	0823
MAX	95	95	96	99	93	MAX	92	92	85	84	84
%>110	0	1	0	3	1	%>110	0	0	0	0	0
%>105	4	5	5	14	6	%>105	1	2	0	0	1
%>100	18	20	26	43	18	%>100	7	11	1	2	3
%>95	48	49	62	76	39	%>95	28	33	6	8	10
%>90	78	77	89	94	65	%>90	63	65	22	23	25
%>85	94	92	98	99	85	%>85	87	87	50	47	46
%>80	99	98	100	100	95	%>80	97	97	77	72	68

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CINCINNATI_OH						CLEVELAND_OH					
LUK	0819	0820	0821	0822	0823	CLE	0819	0820	0821	0822	0823
MAX	90	90	91	88	90	MAX	86	88	90	84	84
%>110	0	0	1	0	0	%>110	0	0	3	0	0
%>105	0	0	3	1	2	%>105	1	0	7	0	0
%>100	3	0	12	4	7	%>100	3	2	16	1	1
%>95	18	7	29	16	23	%>95	10	9	31	6	5
%>90	52	50	55	39	49	%>90	29	32	51	19	17
%>85	85	93	78	67	76	%>85	56	68	70	43	43
%>80	98	100	92	88	92	%>80	81	91	85	70	72

COLUMBIA_SC						COLUMBUS_OH					
CAE	0819	0820	0821	0822	0823	TZR	0819	0820	0821	0822	0823
MAX	99	99	100	103	99	MAX	88	90	90	86	87
%>110	1	0	1	12	3	%>110	0	0	0	0	0
%>105	11	5	12	36	16	%>105	0	0	2	0	1
%>100	45	43	53	67	45	%>100	2	2	8	1	3
%>95	84	88	89	90	77	%>95	13	14	24	7	13
%>90	98	99	99	98	94	%>90	39	46	50	25	33
%>85	100	100	100	100	99	%>85	72	82	76	54	61
%>80	100	100	100	100	100	%>80	93	97	92	81	84

DAYTON_OH						DETROIT_MI					
MGY	0819	0820	0821	0822	0823	DET	0819	0820	0821	0822	0823
MAX	90	91	91	87	88	MAX	89	90	91	85	85
%>110	0	0	1	0	0	%>110	0	0	1	0	0
%>105	1	0	3	0	1	%>105	1	1	5	0	0
%>100	6	2	12	3	4	%>100	4	4	14	2	2
%>95	21	15	31	12	16	%>95	17	18	32	9	8
%>90	50	57	56	33	40	%>90	43	48	55	25	24
%>85	79	91	79	62	69	%>85	72	78	77	52	49
%>80	95	99	93	85	89	%>80	91	94	91	77	75

EVANSVILLE_IN						GRAND_RAPIDS_MI					
EVV	0819	0820	0821	0822	0823	GRR	0819	0820	0821	0822	0823
MAX	91	92	92	90	94	MAX	90	91	88	82	84
%>110	0	0	0	0	1	%>110	0	0	0	0	0
%>105	1	0	2	2	6	%>105	1	1	1	0	0
%>100	5	6	11	8	20	%>100	5	5	6	0	2
%>95	25	29	31	24	43	%>95	19	24	18	2	7
%>90	60	68	60	50	69	%>90	47	59	40	10	20

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%>85	88	93	85	75	88	%>85	76	88	65	31	43
%>80	98	99	96	91	97	%>80	93	98	85	61	67

GREENSBORO_NC						HUNTSVILLE_AL					
GSO	0819	0820	0821	0822	0823	HSV	0819	0820	0821	0822	0823
MAX	92	91	92	93	90	MAX	91	91	94	97	100
%>110	0	1	0	0	0	%>110	0	0	0	1	11
%>105	3	3	2	3	2	%>105	1	0	1	9	28
%>100	11	12	9	14	9	%>100	6	5	8	32	52
%>95	32	30	30	38	25	%>95	24	24	39	66	76
%>90	60	56	60	69	48	%>90	53	62	81	90	91
%>85	83	80	86	90	72	%>85	81	90	98	98	98
%>80	95	93	97	98	89	%>80	95	98	100	100	100

INDIANAPOLIS_IN						KNOXVILLE_TN					
IND	0819	0820	0821	0822	0823	TYS	0819	0820	0821	0822	0823
MAX	90	90	87	86	86	MAX	89	87	90	92	93
%>110	0	0	0	0	0	%>110	0	0	0	0	0
%>105	1	0	1	0	2	%>105	0	0	0	1	1
%>100	4	1	4	2	6	%>100	2	2	3	6	8
%>95	19	11	14	10	16	%>95	14	10	16	30	33
%>90	49	49	35	27	33	%>90	42	34	49	67	69
%>85	79	88	62	54	55	%>85	75	67	81	91	92
%>80	95	99	85	79	75	%>80	93	89	95	98	99

LEXINGTON_KY						LOUISVILLE_KY					
LEX	0819	0820	0821	0822	0823	SDF	0819	0820	0821	0822	0823
MAX	86	88	88	88	90	MAX	89	90	90	89	92
%>110	0	0	0	0	0	%>110	0	0	0	0	1
%>105	0	0	1	1	1	%>105	0	0	2	1	3
%>100	0	1	5	3	5	%>100	2	2	9	6	13
%>95	3	7	17	14	21	%>95	13	16	25	21	33
%>90	20	31	41	36	48	%>90	45	54	51	46	60
%>85	59	70	69	65	77	%>85	81	87	76	73	83
%>80	90	93	89	87	93	%>80	97	98	92	91	95

MEMPHIS_TN						MIAMI_FL					
MEM	0819	0820	0821	0822	0823	MIA	0819	0820	0821	0822	0823
MAX	96	98	101	102	105	MAX	102	101	102	105	105
%>110	0	0	4	6	24	%>110	17	12	16	28	29
%>105	4	3	20	26	48	%>105	36	29	36	49	49

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%>100	22	32	54	61	74	%>100	59	53	61	70	69
%>95	58	82	86	88	91	%>95	79	75	82	86	84
%>90	88	98	98	98	98	%>90	92	91	94	95	94
%>85	98	100	100	100	100	%>85	98	97	98	98	98
%>80	100	100	100	100	100	%>80	99	100	100	100	99

MILWAUKEE_WI						MOBILE_AL					
MKE	0819	0820	0821	0822	0823	MOB	0819	0820	0821	0822	0823
MAX	88	88	82	82	82	MAX	102	101	102	105	106
%>110	2	2	0	0	0	%>110	1	1	2	15	26
%>105	4	5	0	1	1	%>105	13	13	21	49	54
%>100	11	11	1	3	3	%>100	70	62	72	84	80
%>95	22	23	5	8	8	%>95	98	96	97	97	94
%>90	40	41	14	18	18	%>90	100	100	100	100	99
%>85	60	61	32	34	36	%>85	100	100	100	100	100
%>80	78	79	57	56	59	%>80	100	100	100	100	100

NASHVILLE_TN						NEW_YORK_CITY_NY					
BNA	0819	0820	0821	0822	0823	NYC	0819	0820	0821	0822	0823
MAX	91	93	94	96	98	MAX	86	90	91	91	86
%>110	0	0	0	2	4	%>110	0	0	0	0	0
%>105	1	0	3	8	17	%>105	0	1	1	1	0
%>100	7	4	15	25	41	%>100	2	6	8	7	2
%>95	24	32	42	54	69	%>95	10	22	26	26	10
%>90	54	80	74	81	89	%>90	27	51	57	57	27
%>85	82	98	93	95	98	%>85	54	80	84	84	54
%>80	95	100	99	99	100	%>80	80	95	96	96	79

NORFOLK_VA						ORLANDO_FL					
ORF	0819	0820	0821	0822	0823	ORL	0819	0820	0821	0822	0823
MAX	97	93	94	97	89	MAX	106	104	105	107	106
%>110	3	0	0	4	0	%>110	29	21	23	35	33
%>105	11	1	2	13	0	%>105	52	46	48	60	57
%>100	31	10	14	33	3	%>100	75	72	74	82	79
%>95	61	37	44	61	16	%>95	90	90	91	94	93
%>90	86	75	79	84	43	%>90	97	97	98	99	98
%>85	96	96	96	95	75	%>85	99	100	100	100	100
%>80	99	100	100	99	94	%>80	100	100	100	100	100

PHILADELPHIA_PA						PITTSBURGH_PA					
PHL	0819	0820	0821	0822	0823	PIT	0819	0820	0821	0822	0823

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MAX	91	92	94	93	88	MAX	84	85	88	84	84
%>110	1	0	1	0	0	%>110	0	0	0	0	0
%>105	4	1	5	3	1	%>105	0	0	1	0	0
%>100	13	8	18	13	5	%>100	0	1	4	0	1
%>95	30	30	44	38	17	%>95	2	5	14	3	6
%>90	53	64	73	68	40	%>90	12	21	36	15	19
%>85	75	90	92	90	67	%>85	43	52	65	43	45
%>80	90	98	99	98	87	%>80	79	82	87	76	72

PORTLAND_ME						PROVIDENCE_RI					
PWM	0819	0820	0821	0822	0823	PVD	0819	0820	0821	0822	0823
MAX	85	87	82	82	79	MAX	85	87	87	87	84
%>110	0	2	1	0	0	%>110	0	1	0	0	0
%>105	0	6	2	1	0	%>105	1	3	1	2	0
%>100	2	13	5	3	0	%>100	4	8	5	6	2
%>95	9	24	12	8	1	%>95	11	18	15	17	7
%>90	28	39	23	20	7	%>90	26	36	35	37	20
%>85	54	55	38	38	21	%>85	48	58	62	61	42
%>80	75	71	55	58	46	%>80	71	78	84	82	67

RALEIGH-DURHAM_NC						RICHMOND_VA					
RDU	0819	0820	0821	0822	0823	RIC	0819	0820	0821	0822	0823
MAX	98	98	99	101	94	MAX	96	94	95	98	90
%>110	0	1	0	10	0	%>110	0	3	0	4	2
%>105	2	10	6	28	4	%>105	2	9	4	15	5
%>100	28	37	37	54	17	%>100	18	24	20	39	14
%>95	78	73	81	78	44	%>95	58	47	53	68	29
%>90	97	94	98	93	75	%>90	90	70	84	89	50
%>85	100	99	100	98	93	%>85	99	88	97	98	70
%>80	100	100	100	100	99	%>80	100	96	100	100	86

SAVANNAH_GA						TALLAHASSEE_FL					
SAV	0819	0820	0821	0822	0823	TLH	0819	0820	0821	0822	0823
MAX	102	104	104	106	106	MAX	104	103	105	106	109
%>110	6	9	8	27	26	%>110	13	7	17	31	44
%>105	29	38	40	57	53	%>105	44	35	50	58	66
%>100	68	78	81	83	78	%>100	80	77	83	81	83
%>95	93	96	97	96	93	%>95	96	97	97	94	93
%>90	99	100	100	99	98	%>90	100	100	100	99	98
%>85	100	100	100	100	100	%>85	100	100	100	100	99
%>80	100	100	100	100	100	%>80	100	100	100	100	100

TAMPA_FL						WASHINGTON_DC					
TPA	0819	0820	0821	0822	0823	DCA	0819	0820	0821	0822	0823
MAX	104	103	104	106	107	MAX	92	92	93	95	88
%>110	25	19	22	34	36	%>110	0	1	0	1	0
%>105	45	40	44	55	56	%>105	1	3	3	4	1
%>100	68	65	68	75	75	%>100	8	13	13	18	6
%>95	85	85	87	89	88	%>95	29	33	36	48	19
%>90	94	95	96	96	96	%>90	62	60	66	79	42
%>85	98	99	99	99	99	%>85	88	83	88	95	68
%>80	100	100	100	100	100	%>80	98	95	97	99	87

URL IS WWW.WPC.NCEP.NOAA.GOV

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3. Probabilistic Day 3-7 Minimum Heat Index Forecast - Western U.S. (PRBWHL)

FMUS24 KWNH 161545

PRBWHL

DAYS 3--7 HEAT INDEX FORECAST TABLES

NWS WEATHER PREDICTION CENTER COLLEGE PARK MD

1542 UTC MON AUG 16 2021

MINIMUM HEAT INDEX (DEG F) AND MINIMUM HI PROB (%) FRCSTS
AT WESTERN US CITIES - DAYS 3 TO 7 FROM MON AUG 16 2021

ABILENE_TX						ALBUQUERQUE_NM					
ABI	0819	0820	0821	0822	0823	ABQ	0819	0820	0821	0822	0823
MIN	74	75	74	73	72	MIN	62	60	59	61	62
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	0	0	0	0	%>85	0	0	0	0	0
%>80	6	7	4	1	4	%>80	0	0	1	1	0
%>75	37	47	39	26	27	%>75	0	1	4	4	2
%>70	82	90	87	83	70	%>70	5	5	11	13	10

AMARILLO_TX						AUSTIN_TX					
AMA	0819	0820	0821	0822	0823	AUS	0819	0820	0821	0822	0823
MIN	69	69	67	68	68	MIN	79	79	78	78	77

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%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	0	0	0	0	%>85	0	0	1	0	0
%>80	1	0	1	1	0	%>80	37	28	28	19	12
%>75	10	7	9	7	6	%>75	98	96	88	83	79
%>70	39	41	32	31	34	%>70	100	100	100	100	100

BATON_ROUGE_LA						BISMARCK_ND					
BTR	0819	0820	0821	0822	0823	BIS	0819	0820	0821	0822	0823
MIN	78	78	78	76	76	MIN	63	58	53	52	54
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	0	1	0	0	%>85	0	0	0	0	0
%>80	5	17	22	0	1	%>80	0	0	0	0	0
%>75	98	89	80	75	73	%>75	0	1	0	2	0
%>70	100	100	99	100	100	%>70	6	4	0	5	2

BROWNSVILLE_TX						CORPUS_CHRISTI_TX					
BRO	0819	0820	0821	0822	0823	CRP	0819	0820	0821	0822	0823
MIN	89	85	84	84	83	MIN	87	84	83	82	81
%>100	1	0	0	1	0	%>100	1	0	0	0	0
%>95	9	2	3	4	2	%>95	9	4	2	2	2
%>90	42	17	15	16	12	%>90	33	19	13	14	10
%>85	82	55	46	41	37	%>85	66	47	37	35	29
%>80	97	87	79	71	68	%>80	88	75	67	63	55
%>75	100	98	95	90	89	%>75	97	91	87	85	79
%>70	100	100	99	98	98	%>70	99	98	97	96	93

DALLAS_TX						DENVER_CO					
DFW	0819	0820	0821	0822	0823	DEN	0819	0820	0821	0822	0823
MIN	79	80	81	79	78	MIN	63	56	54	56	56
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	1	%>95	0	0	0	0	0
%>90	1	1	1	1	4	%>90	0	0	0	0	0
%>85	7	10	12	9	14	%>85	0	0	0	0	0
%>80	42	49	63	38	37	%>80	0	0	0	0	0
%>75	87	88	95	80	67	%>75	0	0	0	0	1
%>70	99	99	100	97	89	%>70	3	0	0	2	4

DES_MOINES_IA						EL_PASO_TX					
DSM	0819	0820	0821	0822	0823	ELP	0819	0820	0821	0822	0823
MIN	70	73	65	62	67	MIN	67	66	66	67	69
%>100	0	0	0	0	0	%>100	0	0	0	0	0

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%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	1	0	0
%>85	0	1	0	0	1	%>85	0	1	2	2	1
%>80	0	9	1	0	6	%>80	3	3	7	6	5
%>75	8	35	6	2	16	%>75	13	12	18	17	18
%>70	56	72	22	11	34	%>70	35	31	35	37	43

FRESNO_CA						GOODLAND_KS					
FAT	0819	0820	0821	0822	0823	GLD	0819	0820	0821	0822	0823
MIN	63	64	66	66	67	MIN	65	62	56	60	59
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	0	0	1	1	%>85	0	0	0	1	1
%>80	0	0	0	3	4	%>80	2	0	0	3	4
%>75	1	0	3	10	13	%>75	9	2	1	8	9
%>70	8	6	17	27	32	%>70	26	10	5	17	18

GREAT_FALLS_MT						HOUSTON_TX					
GTF	0819	0820	0821	0822	0823	HOU	0819	0820	0821	0822	0823
MIN	42	46	45	46	46	MIN	86	84	84	83	82
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	11	5	7	4	1
%>85	0	0	0	0	0	%>85	59	41	41	32	19
%>80	0	0	0	0	0	%>80	96	87	85	80	67
%>75	0	0	0	0	0	%>75	100	99	99	99	97
%>70	0	0	0	0	0	%>70	100	100	100	100	100

JACKSON_MS						KANSAS_CITY_MO					
JAN	0819	0820	0821	0822	0823	MCI	0819	0820	0821	0822	0823
MIN	77	77	76	76	75	MIN	73	75	69	66	72
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	1
%>85	0	0	0	0	0	%>85	0	1	0	2	3
%>80	8	11	5	1	7	%>80	0	10	2	6	13
%>75	78	76	67	69	51	%>75	13	47	13	16	34
%>70	100	100	100	100	94	%>70	88	87	41	33	61

LAS_VEGAS_NV						LITTLE_ROCK_AR					
LAS	0819	0820	0821	0822	0823	LIT	0819	0820	0821	0822	0823
MIN	75	75	76	76	77	MIN	75	76	77	76	76
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0

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%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	1	0	1	4	%>85	0	0	1	0	1
%>80	9	14	17	17	26	%>80	1	9	16	8	13
%>75	60	58	72	61	67	%>75	55	65	68	60	55
%>70	89	86	91	90	91	%>70	99	98	98	97	92

LOS_ANGELES_CA						MIDLAND_TX					
LAX	0819	0820	0821	0822	0823	MAF	0819	0820	0821	0822	0823
MIN	67	64	64	64	64	MIN	72	72	71	71	71
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	0	0	0	0	%>85	0	0	0	0	0
%>80	0	0	0	0	0	%>80	3	4	1	0	0
%>75	0	0	0	0	0	%>75	24	27	17	11	11
%>70	9	0	0	0	1	%>70	68	72	64	57	58

MINNEAPOLIS_MN						NEW_ORLEANS_LA					
MSP	0819	0820	0821	0822	0823	MSY	0819	0820	0821	0822	0823
MIN	72	73	64	61	62	MIN	84	85	83	81	81
%>100	0	0	0	0	0	%>100	1	1	1	0	0
%>95	0	0	0	0	0	%>95	2	4	2	1	1
%>90	0	0	0	0	0	%>90	10	17	8	2	2
%>85	0	2	0	0	1	%>85	41	45	29	10	13
%>80	0	11	1	0	4	%>80	83	80	70	54	58
%>75	13	36	4	3	10	%>75	100	97	97	98	98
%>70	71	70	17	11	21	%>70	100	100	100	100	100

NORTH_PLATTE_NE						OKLAHOMA_CITY_OK					
LBF	0819	0820	0821	0822	0823	OKC	0819	0820	0821	0822	0823
MIN	67	63	55	58	60	MIN	73	75	73	72	74
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	0	0	0	0	%>85	1	1	2	3	3
%>80	1	1	0	2	1	%>80	8	13	12	12	15
%>75	8	3	0	5	4	%>75	33	48	36	32	43
%>70	30	14	2	12	12	%>70	71	85	68	60	76

OMAHA_NE						PENDLETON_OR					
OMA	0819	0820	0821	0822	0823	PDT	0819	0820	0821	0822	0823
MIN	73	73	63	63	68	MIN	53	56	58	56	56
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	2	0	0	1	%>90	0	0	0	0	0

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%>85	0	8	0	0	3	%>85	0	0	0	0	0
%>80	2	21	0	2	9	%>80	0	0	0	0	0
%>75	26	43	2	7	21	%>75	0	0	0	0	1
%>70	80	66	13	19	40	%>70	0	0	1	0	3

PHOENIX_AZ						PORTLAND_OR					
PHX	0819	0820	0821	0822	0823	PDX	0819	0820	0821	0822	0823
MIN	77	78	78	79	81	MIN	56	58	58	59	57
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	1	%>95	0	0	0	0	0
%>90	1	2	3	2	8	%>90	0	0	0	0	0
%>85	7	10	13	14	26	%>85	0	0	0	0	0
%>80	28	34	39	42	57	%>80	0	0	0	0	1
%>75	62	67	70	75	83	%>75	0	0	0	2	2
%>70	88	90	91	93	96	%>70	0	0	0	7	7

RAPID_CITY_SD						SACRAMENTO_CA					
RAP	0819	0820	0821	0822	0823	SAC	0819	0820	0821	0822	0823
MIN	60	56	50	52	53	MIN	58	58	58	58	59
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	0	0	1	0	%>85	0	0	0	0	0
%>80	0	0	0	2	1	%>80	0	0	0	0	0
%>75	0	0	0	5	3	%>75	0	0	0	0	0
%>70	2	0	1	10	8	%>70	0	0	0	0	0

SAINT_LOUIS_MO						SALT_LAKE_CITY_UT					
STL	0819	0820	0821	0822	0823	SLC	0819	0820	0821	0822	0823
MIN	73	75	75	69	72	MIN	56	53	56	58	60
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	0	3	0	2	%>85	0	0	0	0	0
%>80	0	2	17	2	10	%>80	0	0	0	0	0
%>75	23	47	50	13	31	%>75	0	0	0	0	0
%>70	92	97	84	41	63	%>70	3	0	1	2	2

SAN_ANTONIO_TX						SAN_DIEGO_CA					
SAT	0819	0820	0821	0822	0823	SAN	0819	0820	0821	0822	0823
MIN	79	79	78	77	77	MIN	68	67	66	66	65
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	0	1	0	0	%>85	0	0	0	0	0

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%>80	28	26	23	15	7	%>80	0	0	0	0	0
%>75	98	96	86	83	78	%>75	0	0	0	0	0
%>70	100	100	100	100	100	%>70	6	5	1	1	1

SAN_FRANCISCO_CA						SEATTLE_WA					
SFO	0819	0820	0821	0822	0823	SEA	0819	0820	0821	0822	0823
MIN	56	56	56	56	56	MIN	57	58	58	58	56
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	0	0
%>85	0	0	0	0	0	%>85	0	0	0	0	0
%>80	0	0	0	0	0	%>80	0	0	0	0	0
%>75	0	0	0	0	0	%>75	0	0	0	0	0
%>70	0	0	0	0	0	%>70	0	0	0	1	2

SHREVEPORT_LA						SIOUX_FALLS_SD					
SHV	0819	0820	0821	0822	0823	FSD	0819	0820	0821	0822	0823
MIN	77	77	78	77	76	MIN	71	70	58	58	60
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	1	0	0	0
%>90	0	0	0	0	0	%>90	0	3	0	0	0
%>85	0	1	4	1	0	%>85	0	7	0	0	0
%>80	12	22	30	15	5	%>80	2	16	0	1	2
%>75	80	76	76	69	58	%>75	19	31	1	3	5
%>70	100	99	97	98	98	%>70	62	49	4	10	14

SPRINGFIELD_MO						TUCSON_AZ					
SGF	0819	0820	0821	0822	0823	TUS	0819	0820	0821	0822	0823
MIN	71	73	73	68	72	MIN	67	66	67	68	70
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	1	1
%>85	0	0	0	0	0	%>85	0	1	2	3	4
%>80	0	0	6	1	1	%>80	2	4	6	8	12
%>75	9	17	30	7	19	%>75	10	13	17	21	28
%>70	69	98	72	35	70	%>70	31	32	36	42	50

TULSA_OK						WICHITA_KS					
TUL	0819	0820	0821	0822	0823	ICT	0819	0820	0821	0822	0823
MIN	75	76	75	73	75	MIN	72	73	67	67	71
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	0	0	0	%>90	0	0	0	1	1
%>85	0	0	2	0	0	%>85	0	1	1	3	4
%>80	5	12	14	6	7	%>80	5	7	5	9	13

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%>75	47	60	46	33	52	%>75	27	31	16	20	31
%>70	93	95	81	75	94	%>70	66	70	36	38	56

	YUMA_AZ				
YUM	0819	0820	0821	0822	0823
MIN	81	79	79	78	81
%>100	0	0	0	0	0
%>95	0	0	0	0	0
%>90	0	0	1	0	1
%>85	10	7	8	1	13
%>80	70	46	39	26	58
%>75	93	86	81	82	93
%>70	99	98	97	99	100

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4. Probabilistic Day 3-7 Mean Heat Index Forecast - Eastern U.S. (PRBEHI)

FMUS23 KWNH 161538

PRBEHI

DAYS 3--7 HEAT INDEX FORECAST TABLES
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
1535 UTC MON AUG 16 2021

MEAN HEAT INDEX (DEG F) AND MEAN HI PROB (%) FRCSTS
AT EASTERN US CITIES - DAYS 3 TO 7 FROM MON AUG 16 2021

	AKRON-CANTON_OH						ALBANY_NY				
CAK	0819	0820	0821	0822	0823	ALB	0819	0820	0821	0822	0823
MEAN	77	77	78	76	74	MEAN	77	79	79	79	74
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	1	1	0	0	0
%>90	0	0	0	0	0	%>90	4	5	1	4	0
%>85	1	0	4	3	3	%>85	14	17	10	17	4
%>80	18	13	30	19	16	%>80	34	41	43	46	17
%>75	73	72	76	55	44	%>75	61	70	83	78	46
%>70	98	99	97	87	75	%>70	83	90	98	95	77

	ASHEVILLE_NC						ATLANTA_GA				
AVL	0819	0820	0821	0822	0823	ATL	0819	0820	0821	0822	0823
MEAN	74	73	74	75	74	MEAN	85	83	84	86	86
%>100	0	0	0	0	0	%>100	0	0	0	0	0

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%>95	0	0	0	0	0	%>95	0	0	1	1	1
%>90	0	1	1	0	0	%>90	3	5	8	13	14
%>85	2	3	3	3	3	%>85	45	31	43	61	60
%>80	12	13	15	18	14	%>80	94	74	86	95	94
%>75	41	38	42	53	43	%>75	100	96	99	100	100
%>70	75	69	72	85	75	%>70	100	100	100	100	100

BALTIMORE_MD						BIRMINGHAM_AL					
BWI	0819	0820	0821	0822	0823	BHM	0819	0820	0821	0822	0823
MEAN	83	82	82	84	79	MEAN	84	83	85	87	88
%>100	0	0	0	0	0	%>100	0	0	0	0	1
%>95	0	0	0	1	1	%>95	1	2	1	3	10
%>90	3	5	5	8	4	%>90	9	11	13	24	37
%>85	30	29	28	40	16	%>85	42	38	52	68	73
%>80	79	71	71	81	42	%>80	81	74	88	95	94
%>75	98	95	94	98	73	%>75	97	94	99	100	99
%>70	100	100	99	100	92	%>70	100	99	100	100	100

BOSTON_MA						BUFFALO_NY					
BOS	0819	0820	0821	0822	0823	BUF	0819	0820	0821	0822	0823
MEAN	79	79	78	78	75	MEAN	78	78	79	77	73
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	3	3	2	3	1	%>90	1	0	0	1	0
%>85	15	13	10	14	6	%>85	8	2	7	7	2
%>80	42	39	34	39	22	%>80	36	26	39	28	12
%>75	75	75	69	71	50	%>75	75	79	83	63	37
%>70	95	96	93	92	79	%>70	96	99	99	89	70

CHARLESTON_SC						CHARLESTON_WV					
CHS	0819	0820	0821	0822	0823	CRW	0819	0820	0821	0822	0823
MEAN	90	91	91	92	91	MEAN	80	79	80	80	78
%>100	0	0	0	3	3	%>100	0	0	0	0	0
%>95	3	8	7	25	21	%>95	0	0	0	0	0
%>90	44	60	61	71	62	%>90	0	0	1	3	1
%>85	94	97	97	96	92	%>85	9	5	14	17	10
%>80	100	100	100	100	99	%>80	50	42	53	51	35
%>75	100	100	100	100	100	%>75	91	88	89	84	70
%>70	100	100	100	100	100	%>70	100	99	99	98	92

CHARLOTTE_NC						CHICAGO_IL					
CLT	0819	0820	0821	0822	0823	ORD	0819	0820	0821	0822	0823
MEAN	84	84	84	86	82	MEAN	81	82	79	76	76
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	1	1	1	2	3	%>95	0	0	0	0	1

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%>90	8	10	11	19	12	%>90	0	1	2	1	3
%>85	39	40	43	59	33	%>85	6	20	13	5	11
%>80	80	77	80	90	61	%>80	69	75	43	22	29
%>75	97	95	96	99	84	%>75	98	98	78	53	56
%>70	100	99	100	100	96	%>70	100	100	96	82	80

CINCINNATI_OH						CLEVELAND_OH					
LUK	0819	0820	0821	0822	0823	CLE	0819	0820	0821	0822	0823
MEAN	81	80	81	78	78	MEAN	79	79	80	77	76
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	4	3	3	%>90	0	0	4	1	0
%>85	8	2	21	15	14	%>85	5	3	19	6	4
%>80	56	56	58	40	38	%>80	34	31	52	28	20
%>75	96	99	89	71	69	%>75	82	89	84	64	54
%>70	100	100	99	92	90	%>70	99	100	97	90	85

COLUMBIA_SC						COLUMBUS_OH					
CAE	0819	0820	0821	0822	0823	TZR	0819	0820	0821	0822	0823
MEAN	87	87	87	89	87	MEAN	79	79	80	78	76
%>100	0	0	0	1	1	%>100	0	0	0	0	0
%>95	1	2	4	10	6	%>95	0	0	0	0	0
%>90	19	22	27	41	29	%>90	0	0	1	2	1
%>85	75	69	70	79	66	%>85	5	3	12	11	8
%>80	98	96	95	97	91	%>80	40	39	48	34	26
%>75	100	100	100	100	99	%>75	89	93	86	67	56
%>70	100	100	100	100	100	%>70	100	100	99	90	82

DAYTON_OH						DETROIT_MI					
MGY	0819	0820	0821	0822	0823	DET	0819	0820	0821	0822	0823
MEAN	80	80	81	78	77	MEAN	80	80	82	77	76
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	0	0
%>90	0	0	3	3	2	%>90	0	0	4	1	1
%>85	9	2	20	12	10	%>85	7	7	25	8	7
%>80	51	51	57	36	31	%>80	51	53	65	30	25
%>75	92	98	88	67	61	%>75	93	94	92	66	55
%>70	100	100	99	89	85	%>70	100	100	99	91	83

EVANSVILLE_IN						GRAND_RAPIDS_MI					
EVV	0819	0820	0821	0822	0823	GRR	0819	0820	0821	0822	0823
MEAN	82	82	82	79	81	MEAN	79	79	79	73	73
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	1	1	2	%>95	0	0	0	0	0
%>90	0	1	7	5	10	%>90	0	0	3	0	1

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%>85	15	20	31	19	29	%>85	2	2	15	2	5
%>80	70	71	68	45	57	%>80	31	37	43	12	17
%>75	98	97	92	73	82	%>75	88	93	75	37	40
%>70	100	100	99	91	95	%>70	100	100	94	69	67

GREENSBORO_NC						HUNTSVILLE_AL					
GSO	0819	0820	0821	0822	0823	HSV	0819	0820	0821	0822	0823
MEAN	82	81	81	82	79	MEAN	82	82	84	85	87
%>100	0	0	0	0	0	%>100	0	0	0	0	1
%>95	0	1	1	1	1	%>95	0	0	0	1	6
%>90	4	7	5	7	6	%>90	2	1	2	15	27
%>85	24	25	23	30	20	%>85	22	22	34	54	62
%>80	63	57	55	67	44	%>80	72	76	90	90	89
%>75	91	84	84	91	71	%>75	97	98	100	99	98
%>70	99	97	97	99	89	%>70	100	100	100	100	100

INDIANAPOLIS_IN						KNOXVILLE_TN					
IND	0819	0820	0821	0822	0823	TYS	0819	0820	0821	0822	0823
MEAN	80	80	80	76	76	MEAN	80	79	80	82	81
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	1	%>95	0	0	0	0	0
%>90	0	0	3	2	3	%>90	0	0	0	1	2
%>85	6	3	17	9	12	%>85	8	4	10	22	19
%>80	50	53	48	29	29	%>80	55	41	57	72	59
%>75	94	97	81	59	55	%>75	94	88	93	97	91
%>70	100	100	96	84	78	%>70	100	99	99	100	99

LEXINGTON_KY						LOUISVILLE_KY					
LEX	0819	0820	0821	0822	0823	SDF	0819	0820	0821	0822	0823
MEAN	78	79	79	79	78	MEAN	81	81	81	80	80
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	0	0	0	1	1
%>90	0	0	1	2	3	%>90	0	0	5	4	6
%>85	2	5	12	13	13	%>85	9	11	24	19	21
%>80	32	37	45	40	37	%>80	60	61	60	47	49
%>75	85	84	82	73	68	%>75	96	94	88	77	77
%>70	99	99	97	93	90	%>70	100	100	98	94	93

MEMPHIS_TN						MIAMI_FL					
MEM	0819	0820	0821	0822	0823	MIA	0819	0820	0821	0822	0823
MEAN	86	87	89	89	90	MEAN	94	92	92	95	97
%>100	0	0	0	1	4	%>100	9	3	2	10	25
%>95	1	1	6	9	19	%>95	38	14	15	42	61
%>90	15	20	38	39	52	%>90	86	72	82	94	90
%>85	63	74	84	79	84	%>85	99	99	100	100	98

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%>80	95	98	99	97	97	%>80	100	100	100	100	100
%>75	100	100	100	100	100	%>75	100	100	100	100	100
%>70	100	100	100	100	100	%>70	100	100	100	100	100

MILWAUKEE_WI						MOBILE_AL					
MKE	0819	0820	0821	0822	0823	MOB	0819	0820	0821	0822	0823
MEAN	78	79	76	73	74	MEAN	90	90	90	91	91
%>100	0	0	0	0	0	%>100	0	0	0	0	1
%>95	0	0	0	0	0	%>95	1	2	2	6	16
%>90	1	2	1	0	0	%>90	44	42	45	62	60
%>85	7	11	7	2	3	%>85	100	96	97	98	94
%>80	33	41	25	11	15	%>80	100	100	100	100	100
%>75	76	79	57	35	43	%>75	100	100	100	100	100
%>70	96	96	85	69	75	%>70	100	100	100	100	100

NASHVILLE_TN						NEW_YORK_CITY_NY					
BNA	0819	0820	0821	0822	0823	NYC	0819	0820	0821	0822	0823
MEAN	82	83	84	85	85	MEAN	80	82	82	82	78
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	3	3	%>95	0	0	0	1	1
%>90	2	2	7	16	17	%>90	1	2	3	7	5
%>85	21	26	38	47	48	%>85	13	21	23	29	16
%>80	69	78	81	80	80	%>80	51	69	68	66	40
%>75	96	98	98	96	96	%>75	88	96	96	92	67
%>70	100	100	100	100	100	%>70	99	100	100	99	88

NORFOLK_VA						ORLANDO_FL					
ORF	0819	0820	0821	0822	0823	ORL	0819	0820	0821	0822	0823
MEAN	87	85	85	87	83	MEAN	92	91	91	92	92
%>100	0	0	0	0	0	%>100	1	0	0	1	2
%>95	1	0	1	2	1	%>95	18	11	12	20	24
%>90	18	7	11	22	8	%>90	70	61	63	77	76
%>85	76	51	54	71	32	%>85	97	96	97	99	98
%>80	99	94	93	97	71	%>80	100	100	100	100	100
%>75	100	100	100	100	94	%>75	100	100	100	100	100
%>70	100	100	100	100	99	%>70	100	100	100	100	100

PHILADELPHIA_PA						PITTSBURGH_PA					
PHL	0819	0820	0821	0822	0823	PIT	0819	0820	0821	0822	0823
MEAN	82	82	83	83	78	MEAN	77	77	77	77	74
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	1	0	0	1	1	%>95	0	0	0	0	0
%>90	7	2	4	7	5	%>90	0	0	0	0	1
%>85	30	23	29	31	17	%>85	0	1	4	5	4
%>80	67	74	74	70	40	%>80	15	20	28	24	17

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%>75	92	98	97	94	67	%>75	72	68	72	62	44
%>70	99	100	100	99	87	%>70	99	96	96	90	74

	PORTLAND_ME						PROVIDENCE_RI				
PWM	0819	0820	0821	0822	0823	PVD	0819	0820	0821	0822	0823
MEAN	77	78	75	75	73	MEAN	79	80	79	80	77
%>100	0	0	0	0	0	%>100	0	0	0	0	0
%>95	0	0	0	0	0	%>95	1	1	0	1	0
%>90	0	2	1	1	0	%>90	6	6	3	5	2
%>85	3	11	7	6	1	%>85	19	21	15	19	9
%>80	26	35	22	21	9	%>80	43	47	45	47	30
%>75	69	69	50	50	34	%>75	71	75	80	77	61
%>70	97	94	81	81	70	%>70	90	93	96	94	86

	RALEIGH-DURHAM_NC						RICHMOND_VA				
RDU	0819	0820	0821	0822	0823	RIC	0819	0820	0821	0822	0823
MEAN	86	86	86	87	83	MEAN	85	84	84	86	80
%>100	0	0	0	0	0	%>100	0	0	0	0	1
%>95	0	2	2	6	2	%>95	0	3	1	3	3
%>90	9	18	16	30	12	%>90	8	15	10	20	11
%>85	67	61	57	70	37	%>85	54	44	41	58	28
%>80	97	92	90	94	69	%>80	94	77	79	89	52
%>75	100	99	99	99	90	%>75	100	95	97	99	76
%>70	100	100	100	100	98	%>70	100	99	100	100	91

	SAVANNAH_GA						TALLAHASSEE_FL				
SAV	0819	0820	0821	0822	0823	TLH	0819	0820	0821	0822	0823
MEAN	90	90	91	92	92	MEAN	91	89	90	91	92
%>100	0	0	0	2	3	%>100	0	0	0	1	5
%>95	4	6	8	21	22	%>95	2	1	4	12	28
%>90	48	53	56	66	65	%>90	60	39	51	61	70
%>85	95	96	96	95	94	%>85	99	96	97	96	95
%>80	100	100	100	100	100	%>80	100	100	100	100	100
%>75	100	100	100	100	100	%>75	100	100	100	100	100
%>70	100	100	100	100	100	%>70	100	100	100	100	100

	TAMPA_FL						WASHINGTON_DC				
TPA	0819	0820	0821	0822	0823	DCA	0819	0820	0821	0822	0823
MEAN	92	91	92	93	94	MEAN	83	83	82	84	79
%>100	1	1	1	2	5	%>100	0	0	0	0	0
%>95	19	12	16	27	39	%>95	0	1	1	1	1
%>90	74	68	73	85	86	%>90	4	8	9	12	6
%>85	98	98	98	99	99	%>85	32	32	31	43	20
%>80	100	100	100	100	100	%>80	78	68	65	80	44
%>75	100	100	100	100	100	%>75	98	92	89	97	70

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%>70 100 100 100 100 100 %>70 100 99 98 100 89

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