Department of Commerce • National Oceanic & Atmospheric Administration • National Weather Service

NATIONAL WEATHER SERVICE INSTRUCTION 10-504
MARCH 9, 2021

Operations and Services
Public Weather Services, NWSPD 10-5

NATIONAL PUBLIC WEATHER FORECAST PRODUCTS SPECIFICATION

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

OPR: W/AFS21 (K. McMahon) **Certified by:** W/AFS21 (S. Bieda)

Type of Issuance: Routine - Admin Update

SUMMARY OF REVISIONS: This directive supersedes NWSI 10-504, "*National Public Weather Forecast Products Specification*," dated March 9, 2021. This is an administrative update made only to change all references of "Gulf of Mexico" to "Gulf of America". No content changes were made with this update, and the effective date was not affected.

ALLEN.ALLISON.LEIGH.1365831072 Digitally signed by ALLEN.ALLISON.LEIGH.1365831072 Date: 2025.03.18 07:15:56 -04'00'

Allison Allen Date
Director
Analyze, Forecast, and Support Office

National Public Weather Forecast Products Specification

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1 Introduction

This procedural instruction describes narrative, tabular and graphical weather products issued by multiple National Centers for Environmental Prediction (NCEP) offices. The Canadian Urban Forecast, issued by the Meteorological Service of Canada, and retransmitted by the National Weather Service (NWS), is included for domestic public interests.

2 Short Range Forecast Discussion (PMDSPD)

2.1 Mission Connection

The Weather Prediction Center (WPC) issues a Short Range Forecast Discussion that provides the meteorological reasoning behind the Surface Fronts and Pressure Charts (section 11) graphical products. This guidance is used by CONUS NWS Weather Forecast Offices (WFOs)

and the general meteorological community such as the private sector and the media, as well as the aviation community. The Short Range Forecast Discussion is available at the following link: https://www.wpc.ncep.noaa.gov/discussions/pmdspd.html.

2.2 Issuance Guidance

2.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

2.2.2 Issuance Criteria

This is a routine, schedule-driven product.

2.2.3 Issuance Times

0900 and 2100 UTC.

2.2.4 Valid Time

1200 UTC Day 1 to 0000 UTC Day 3 for 0900 UTC issuance, and 0000 UTC Day 2 to 1200 UTC Day 3 for 2100 UTC issuance.

2.2.5 Product Expiration Time

Product expires with the next issuance.

2.3 Technical Description

The Short Range Forecast Discussion should follow the format and content described in this section.

2.3.1 MND Broadcast Line

Not applicable.

2.3.2 MND Header

The MND header is Short Range Forecast Discussion.

2.3.3 Content

A narrative that may use standard NWS abbreviations that summarizes expected weather hazards, and describes the meteorological reasoning for the location of significant weather features and precipitation across the CONUS for the next 12 to 48 hours.

2.3.4 Format

```
FXUS01 KWBC ddhhmm
PMDSPD

Short Range Forecast Discussion
NWS Weather Prediction Center College Park MD
```

```
Time AM/PM TIMEZONE Day Mon dd yyyy

Valid hhZ Day Mon dd yyyy - hhZ Day Mon dd yyyy

...Descriptive Headline #1...

...Descriptive Headline #2...

 (Up to 4 headlines may be used to call attention to noteworthy
conditions)

Free-form technical discussion that describes the national weather
pattern across the CONUS over the next couple days. Generally 2-3
paragraphs long.

Forecaster's Name

Graphics available at
www.wpc.ncep.noaa.gov/basicwx/basicwx_ndfd.php

$$
```

2.4 Updates, Amendments, and Corrections

This product is not routinely updated or amended; however, amendments should be made if the National Hurricane Center (NHC) has introduced a named tropical system, or changed the storm strength or forecast track. WPC will correct for format and grammatical errors as required.

3 Extended Forecast Discussion (product category PMDEPD)

3.1 Mission Connection

WPC issues an Extended Forecast Discussion that provides the meteorological reasoning behind the forecasts for Days 3 to 7. This guidance is used by CONUS NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community.

3.2 Issuance Guidelines

3.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

3.2.2 Issuance Criteria

This is a routine, schedule-driven product.

3.2.3 Issuance Time

Daily at 0700 UTC and 1900 UTC.

3.2.4 Valid Time

1200 UTC Day 3 to 1200 UTC Day 7.

3.2.5 Product Expiration Time

Product expires with next product issuance.

3.3 Technical Description

The Extended Forecast Discussion should follow the format and content described in this section.

3.3.1 MND Broadcast Line

Not applicable.

3.3.2 MND Header

The MND header is Extended Forecast Discussion.

3.3.3 Content

This is a text product that describes the meteorological reasoning, forecast uncertainty, and significant weather hazards associated with the Days 3 to 7 forecast, including generation of the Days 3 to 7 surface prognostications (progs; section 13). WPC also routinely produces gridded forecast guidance for the CONUS that includes temperature, dew point, winds, cloud cover, probability of precipitation, weather type, quantitative precipitation forecasts (QPF; see NWSI 10-930), and a Winter Weather Outlook (WWO; see NWSI 10-514). All Days 3 to 7 forecast products are available at the following link: https://www.wpc.ncep.noaa.gov/medr/medr.shtml.

3.3.4 Format

```
FXUS02 KWBC ddhhmm
PMDEPD

Extended Forecast Discussion
NWS Weather Prediction Center College Park MD
Time AM/PM TIMEZONE Day Mon dd yyyy

Valid hhZ Day Mon dd yyyy - hhZ Day Mon dd yyyy

...Headline (only added in special circumstances to draw attention to a
significant threat in the extended forecast period)...

...Guidance/Predictability Assessment...

Description of the evolution of the larger scale pattern over the CONUS and
an analysis of model guidance preferences and uncertainty.

...Weather Pattern/Hazard Highlights...

A brief discussion of the potential for organized areas of hazardous
weather across the CONUS.
```

```
Forecaster's Name


Hazards:
- (Short description of Hazard #1, valid dates)
- (Short description of Hazard #2, valid dates)
(list of hazards is appended from the Day 3-7 Hazards Outlook once per day,
see section 3.4 Updates, Amendments and Corrections)

Additional 3-7 Day Hazards information can be found on the WPC medium range
hazards chart at:
https://www.wpc.ncep.noaa.gov/threats/threats.php

WPC medium range 500mb heights, surface systems, weather grids,
quantitative precipitation, winter weather outlook probabilities and heat
indices are at:

https://www.wpc.ncep.noaa.gov/medr/5dayfcst500_wbg.gif
https://www.wpc.ncep.noaa.gov/medr/5dayfcst_wbg_conus.gif
https://www.wpc.ncep.noaa.gov/5km_grids/5km_gridsbody.html
https://www.wpc.ncep.noaa.gov/qpf/day4-7.shtml
https://www.wpc.ncep.noaa.gov/wwd/pwpf_d47/pwpf_medr.php?day=4
https://www.wpc.ncep.noaa.gov/heat_index.shtml

$$
```

3.4 Updates, Amendments, and Corrections

Updated once by 2030 UTC, Monday through Friday only, to append headlines from the Day 3-7 Hazards Outlook. The update does not occur on Saturday and Sunday. WPC will correct for format and grammatical errors as required.

4 Alaska Extended Forecast Discussion (product category PMDAK)

4.1 Mission Connection

WPC issues an Extended Forecast Discussion for the state of Alaska that provides the meteorological reasoning behind the forecasts for Days 4 to 8. This guidance is used by Alaska WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. The products support the NWS public and aviation weather programs.

4.2 Issuance Guidelines

4.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

4.2.2 Issuance Criteria

This is a routine, schedule-driven product.

4.2.3 Issuance Time

Daily at 0000 UTC.

4.2.4 Valid Time

1200 UTC Day 4 to 1200 UTC Day 8.

4.2.5 Product Expiration Time

Product expires with next product issuance.

4.3 Technical Description

The Alaska Extended Forecast Discussion should follow the format and content described in this section.

4.3.1 MND Broadcast Line

Not applicable.

4.3.2 MND Header

The MND header is Alaska Extended Forecast Discussion.

4.3.3 Content

This is a text product that describes the meteorological reasoning, forecast uncertainty, and significant weather hazards associated with the Days 4 to 8 forecast, including generation of the Days 4 to 8 surface prognostications (progs; section 14). WPC also routinely produces gridded forecast guidance for Alaska that includes temperature, dew point, winds, cloud cover, probability of precipitation, and weather type. All Days 4 to 8 forecast products for Alaska are available at the following link: https://www.wpc.ncep.noaa.gov/alaska/akmedr.shtml.

4.3.4 Format

```
FXAK02 KWNH ddhhmm
PMDAK

Alaska Extended Forecast Discussion
NWS Weather Prediction Center College Park MD
Time AM/PM TIMEZONE Day Mon dd yyyy

Valid hhZ Day Mon dd yyyy - hhZ Day Mon dd yyyy

...Headline (only added in special circumstances to draw attention to a
significant threat in the extended forecast period)...

...Overview and Guidance/Predictability Assessment...

Description of the evolution of the larger scale pattern over the CONUS and
an analysis of model guidance preferences and uncertainty.

...Weather/Hazard Highlights...
```

```
A brief discussion of the potential for organized areas of hazardous weather
across the CONUS.

Forecaster's Name


Hazards:
- (Short description of Hazard #1, valid dates)
- (Short description of Hazard #2, valid dates)
(list of hazards is appended from the Day 3-7 Hazards Outlook; only includes
Alaska hazards in this discussion)

Additional 3-7 Day Hazards information can be found on the WPC medium range
hazards chart at:
https://www.wpc.ncep.noaa.gov/threats/threats.php

WPC medium range Alaskan products including 500mb, surface fronts/pressures
progs and sensible weather grids can also be found at:

https://www.wpc.ncep.noaa.gov/alaska/ak_5dayfcst500_wbg.gif
https://www.wpc.ncep.noaa.gov/alaska/akmedr.shtml
https://www.wpc.ncep.noaa.gov/alaska/ak_5km_gridsbody.html

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```

4.4 Updates, Amendments, and Corrections

This product is not updated or amended. WPC will correct for format and grammatical errors as required.

5 Hawaii Discussion (product category PMDHI)

5.1 Mission Connection

The Hawaii Discussion focuses on Days 1-7 model differences, and highlights the reasoning used by the WPC forecaster in terms of model preferences for particular weather situations. This product supports the public and private sector with a focus on Hawaii.

5.2 Issuance Guidelines

5.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

5.2.2 Issuance Criteria

This is a routine, schedule-driven product.

5.2.3 Issuance Time

1200 UTC.

5.2.4 Valid Time

0000 UTC Day 1 to 0000 UTC Day 8.

5.2.5 Product Expiration Time

Product expires after the next product issuance.

5.3 Technical Description

The Hawaii Discussion should follow the format and content described in this section.

5.3.1 MND Broadcast Line

Not applicable.

5.3.2 MND Header

The MND header is Hawaii Extended Forecast Discussion.

5.3.3 Content

This is a text product that describes the meteorological reasoning for the location of significant weather and precipitation features in the vicinity of the Hawaiian Islands for the 7 day period.

5.3.4 Format

```
FXHW01 KWNH ddhhmm
PMDHI

Hawaii Extended Forecast Discussion
NWS Weather Prediction Center College Park MD
Time AM/PM TIMEZONE Day Mon dd yyyy

Valid hhZ Day Mon dd yyyy - hhZ Day Mon dd yyyy

...Headline (only added in special circumstances to draw attention to a
significant threat in the extended forecast period)...

A brief discussion highlighting model differences and preferences, and the
relationship to significant weather and precipitation.

Forecaster's Name

$$
```

5.4 Updates, Amendments, and Corrections

No updates are issued for this product. WPC will correct for format and grammatical errors as required.

6 Caribbean Discussion (product category PMDCA)

6.1 Mission Connection

The WPC International Desks issue the Caribbean Discussion as an operational product in support of the San Juan, PR WFO, and as guidance to Mexican, Central American and Caribbean Basin users. It includes a forecast discussion and model comparison.

6.2 Issuance Guidelines

6.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

6.2.2 Issuance Criteria

This is a routine, schedule-driven product.

6.2.3 Issuance Time

Preliminary discussion in support of the San Juan WFO issued by 1300 UTC, Monday through Friday, and on weekends and holidays upon request, or for significant weather events. Basin-wide discussion issued by 1830 UTC, Monday through Friday only, and excluding holidays.

6.2.4 Valid Time

Preliminary discussion is valid from 1200 UTC Day 1 through 0000 UTC Day 5. Basin-wide discussion is valid from 0000 UTC Day 1 through 1200 UTC Day 3.

6.2.5 Product Expiration Time

Product expires with next product issuance.

6.3 Technical Description

The Caribbean Discussion should follow the format and content described in this section.

6.3.1 MND Broadcast Line

Not applicable.

6.3.2 MND Header

The MND header is TROPICAL DISCUSSION - INTERNATIONAL DESKS.

6.3.3 Content

The preliminary discussion provides a synopsis and forecast focused solely on the San Juan WFO forecast area, including Puerto Rico and the U.S. Virgin Islands. The basin-wide discussion gives a synopsis and forecast for Mexico, the Caribbean and South America north of the Equator. An accompanying set of graphics for the Caribbean basin is produced each day, as well as quantitative precipitation forecast (QPF) guidance for the San Juan WFO. These graphics are available at the following links:

https://www.wpc.ncep.noaa.gov/international/crb_day1-3.shtml
https://www.wpc.ncep.noaa.gov/qpf/pr_qpf.php

6.3.4 Format

The format is described separately below for the preliminary discussion (first) and the basin-wide discussion (second).

```
FXCA20 KWBC ddhhmm
PMDCA

TROPICAL DISCUSSION - INTERNATIONAL DESKS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
TIME AM/PM TIMEZONE DAY MON dd yyyy

PRELIMINARY DISCUSSION FOR PUERTO RICO AND THE USVI FROM MON dd/hhUTC: (FREE
FORM DISCUSSION WITH FORECAST SUMMARY AND MODEL COMPARISON)

FORECASTER NAME...WPC (USA)

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```

```
FXCA20 KWBC ddhhmm
PMDCA

TROPICAL DISCUSSION - INTERNATIONAL DESKS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
TIME AM/PM TIMEZONE DAY MON dd yyyy

TROPICAL DISCUSSION FROM MONTH dd/hhUTC: (REGION #1...REGIONAL FORECAST
DISCUSSION THAT DESCRIBES THE SYNOPTIC WEATHER PATTERN AND PRECIPITATION
POTENTIAL)

(REGION #2...ADDITIONAL REGIONAL DISCUSSIONS AS NECESSARY)

TROPICAL/EASTERLY WAVES INITIALIZED ON MONTH dd AT hh UTC:
TYPE - dd/hh dd/hh dd/hh dd/hh dd/hh dd/hh dd/hh dd/hh SOF
TW   -   xxW   xxW   xxW   xxW   xxW   xxW   xxW   xxW xxN
TW   -   xxW   xxW   xxW   xxW   xxW   DISS  ---   --- xxN
TW   -   xxW   EXITS ---   ---   ---   ---   ---   --- xxN

(THIS SECTION IS USED TO TRACK AND DESCRIBE SIGNIFICANT TROPICAL WAVES AND
OTHER FEATURES OF INTEREST IN THE TROPICS. A DATA TABLE IS INCLUDED FIRST
IN THE FORMAT SHOWN ABOVE WITH "xx" INDICATING LATITUDE OR LONGITUDE. THIS IS
FOLLOWED BY A DISCUSSION OF INDIVIDUAL FEATURES OF INTEREST)

FORECASTER NAME...WPC (USA)
FORECASTER NAME...(ORGANIZATION) (COUNTRY)

$$
```

6.4 Updates, Amendments, and Corrections

This product is not updated or amended. WPC will correct for format and grammatical errors as required.

7 South America Forecast Discussion (product category PMDSA)

7.1 Mission Connection

WPC International Desks issue an overview discussion of numerical model guidance for South America to regional users.

7.2 Issuance Guidelines

7.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

7.2.2 Issuance Criteria

This is a routine, schedule-driven product.

7.2.3 Issuance Time

1630 UTC, Monday through Friday only, and excluding holidays.

7.2.4 Valid Time

0000 UTC Day 1 through 0000 UTC Day 6.

7.2.5 Product Expiration Time

Product expires with next product issuance.

7.3 Technical Description

The South America Forecast Discussion should follow the format and content described in this section.

7.3.1 MND Broadcast Line

Not applicable.

7.3.2 MND Header

The MND header is SOUTH AMERICA FORECAST DISCUSSION - INTERNATIONAL DESKS.

7.3.3 Content

This text bulletin provides an overview of the model forecasts and associated weather for South America for Days 1 through 6. An accompanying set of graphics for South America is produced each day, and these graphics are available at the following link:
https://www.wpc.ncep.noaa.gov/international/sam_fcsts.shtml

7.3.4 Format

```
FXSA20 KWBC ddhhmm
PMDSA

SOUTH AMERICA FORECAST DISCUSSION – INTERNATIONAL DESKS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
TIME AM/PM TIMEZONE DAY MON dd yyyy

GFS DATA AT FTPPRD.NCEP.NOAA.GOV/PUB/DATA/NCCF/COM/GFS/PROD/

FORECAST DISCUSSION FROM MONTH dd/hhUTC: FREE FORM DISCUSSION THAT DESCRIBES
THE SYNOPTIC WEATHER PATTERN...PRECIPITATION POTENTIAL...AND SIGNIFICANT
WEATHER EVENTS ACROSS SOUTH AMERICA.

FORECASTER NAME...WPC (USA)
FORECASTER NAME...(ORGANIZATION) (COUNTRY)

$$
```

7.4 Updates, Amendments, and Corrections

No updates or amendments are issued for this product. WPC will correct for format and grammatical errors as required.

8 Surface Fronts and Pressure Analysis (product categories 90F, 90I)

8.1 Mission Connection

WPC issues the Surface Fronts and Pressure Analysis as guidance to CONUS NWS WFOs and Alaskan WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. The product extends a historical legacy and archive of map analysis that extends back to the earliest days of the NWS.

The product also forms a portion of the NWS Unified Surface Analysis, which is jointly produced by NHC, the Ocean Prediction Center (OPC), and WFO Honolulu, Hawaii and integrates analysis from multiple offices for a large portion of the Northern Hemisphere. More information on the Unified Surface Analysis is available at this link: https://ocean.weather.gov/unified_analysis.php.

8.2 Issuance Guidelines

8.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

8.2.2 Issuance Criteria

These are routine, schedule-driven products.

8.2.3 Issuance Time and Valid Time

Refer to Table 1.

Table 1: Surface Fronts and Pressure Chart Issuance and Valid Times

WPC Surface Fronts and Pressure Analysis Product Schedule				
Valid Time (UTC)	*Issuance Time (UTC)*	*AWIPS ID*	*WMO Header*	*Product Description*
0000	0130	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
0300	0430	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
0600	0730	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
0900	1030	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
1200	1330	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
1500	1630	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
1800	1930	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
2100	2230	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)

8.2.4 Product Expiration Time

Not applicable.

8.3 Technical Description

Charts should follow the format and content described in this section and described in more detail in the NCEP Unified Surface Analysis Manual located here: https://www.wpc.ncep.noaa.gov/sfc/UASfcManual.pdf.

8.3.1 MND Broadcast Line and Header

Not applicable.

8.3.2 Content

This product depicts the analysis of synoptic and sub-synoptic / mesoscale surface features including highs, lows, fronts, troughs, outflow boundaries, squall lines, and dry lines. The analysis domain covers most of North America, the Western Atlantic and Eastern Pacific oceans, and the Gulf of America.

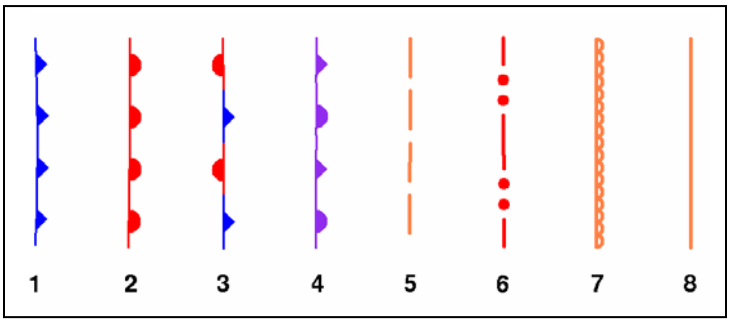

Figure 1: Symbols Used for Surface Analysis

Key to Features
1 – Cold Front; 2 – Warm Front; 3 – Stationary Front; 4 – Occluded Front; 5 – Trough ("TROF"), also used to Depict Outflow Boundary ("OUTFLOW BNDRY"); 6 – Squall Line; 7 – Dry Line; 8 – Tropical Wave ("TRPCL WAVE")

8.3.3 Format

Product will follow the format as indicated by Figure 2 below, which shows a North American scale version of the analysis. Additional map domains are available at the following link: https://www.wpc.ncep.noaa.gov/html/sfc2.shtml.

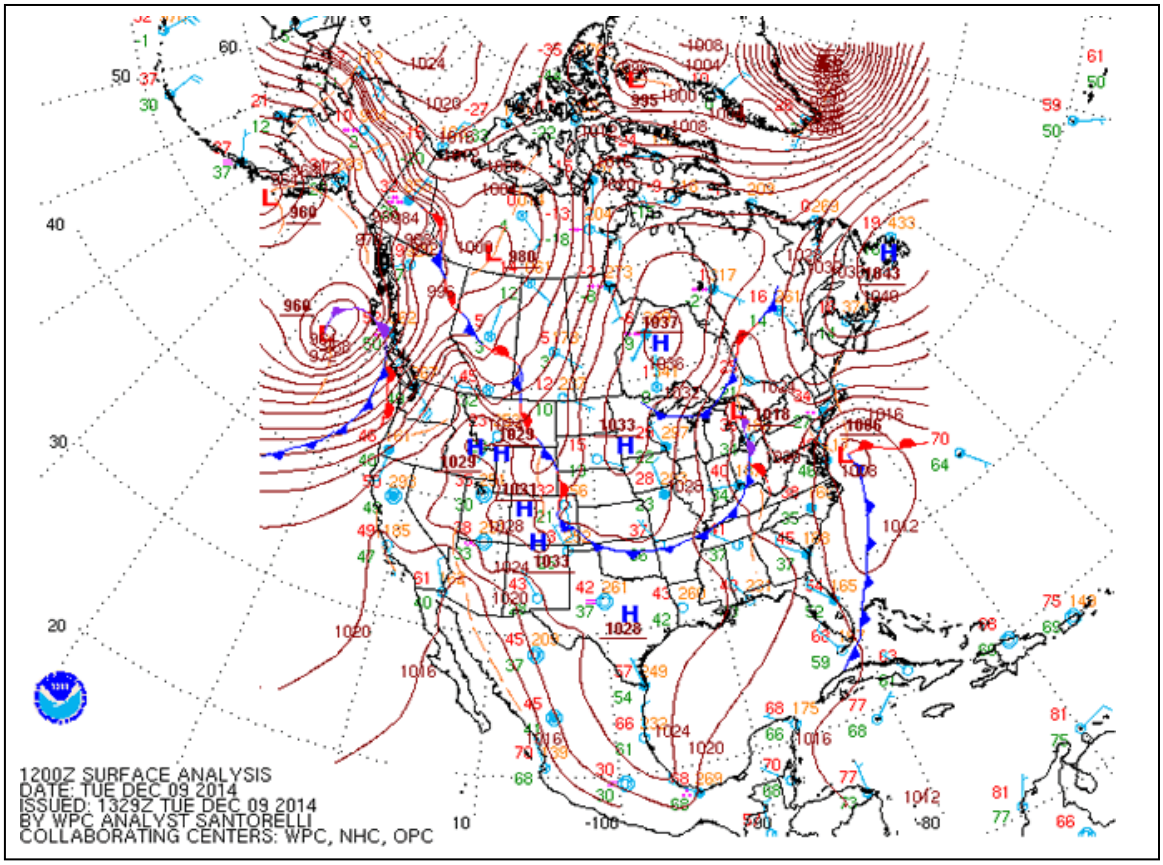

Figure 2: Surface Fronts and Pressure Analysis

8.4 Updates, Amendments, and Corrections

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

9 Coded Surface Frontal Positions (product category CODSUS)

9.1 Mission Connection

WPC issues the Coded Surface Frontal Positions as guidance to NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community.

9.2 Issuance Guidelines

9.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

9.2.2 Issuance Criteria

These are routine, schedule-driven products.

9.2.3 Issuance Time and Valid Time

Refer to Tables 2 and 3.

Table 2: Coded Surface Frontal Position Product Schedule for Low Resolution Product

WPC Coded Surface Frontal Position Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0130	0000	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
0430	0300	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
0730	0600	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1030	0900	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1330	1200	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1630	1500	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1930	1800	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
2230	2100	CODSUS	ASUS01 KWBC	Coded description of frontal analysis

Table 3: Coded Surface Frontal Position Product Schedule for High Resolution Product

WPC Coded Surface Frontal Position Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0130	0000	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
0430	0300	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
0730	0600	CODSUS	ASUS02 KWBC	Coded description of frontal analysis

1030	0900	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
1330	1200	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
1630	1500	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
1930	1800	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
2230	2100	CODSUS	ASUS02 KWBC	Coded description of frontal analysis

9.2.4 Product Expiration Time

Not applicable.

9.3 Technical Description

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

9.3.1 MND Broadcast Line

Not applicable.

9.3.2 MND Header

The MND header is CODED SURFACE FRONTAL POSITIONS.

9.3.3 Content

These are text bulletins that describe the latitude and longitude positions of vertices along the analyzed frontal positions or significant weather features, as well as the positions of high and low pressure centers. The low resolution product rounds the latitude and longitude to the nearest degree. The high resolution product reports latitude and longitude to a tenth of a degree.

Here is specific information on how to decode / interpret the bulletin:

44109: 44°N Latitude, 109°W Longitude (*coordinates for low resolution product*)
4431092: 44.3°N Latitude, 109.2°W Longitude (*coordinates for high resolution product*)
HIGHS: High Pressure Centers
LOWS: Low Pressure Centers
COLD: Cold Front
WK: Weak
WARM: Warm Front
STNRY: Stationary Front
TROF: Surface Boundary (*can be a trough, outflow boundary, squall line, or dry line*)
OCFNT: Occluded Front

The valid time is decoded MMDDHH.

9.3.4 Format

The format shown below is for the low-resolution product. The latitude and longitude will be slightly different in the high-resolution product, as described in section 9.3.3. Pressure values are indicated by “p,” latitude values are indicated by “A,” and longitude values are indicated by “O.”

```
ASUS01 KWBC ddhhmm
CODSUS

CODED SURFACE FRONTAL POSITIONS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
TIME AM/PM TIMEZONE DAY MON dd yyyy

VALID mmddhhZ
HIGHS pppp AAOO pppp AAOOO (sequence repeats as necessary; note that
longitude varies in length depending on whether it is east or west of 100°W)
LOWS pppp AAOO pppp AAOO (sequence repeats as necessary)
TROF AAOO AAOOO AAOOO AAOOO (sequence repeats as necessary)
COLD WK AAOOO AAOOO AAOOO AAOOO (sequence repeats as necessary)
COLD AAOO AAOO AAOO AAOO (sequence repeats as necessary)

(The product will include as many lines as needed to convey all the features
included on a particular surface analysis)

$$
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9.4 Updates, Amendments, and Corrections

This product is not updated or amended. Corrections are issued as necessary.

10 Today's National Forecast Chart (no product ID or Header)

10.1 Mission Connection

WPC compiles three significant weather charts that highlight the critical weather expected over the next three days for the CONUS. These products are used by NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. A Spanish version is also issued for all three days.

10.2 Issuance Guidelines

10.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

10.2.2 Issuance Criteria

These are routine, schedule-driven products.

10.2.3 Issuance Time and Valid Time

Refer to Table 4.

Table 4: National Forecast Chart Product Schedule

WPC National Forecast Chart Product Schedule		
Version	***Issuance Time***	***Valid Time***
Day 1	1000 UTC	1200 UTC Day 1 to 1200 UTC Day 2
Day 2	1000 UTC	1200 UTC Day 2 to 1200 UTC Day 3
Day 3	1000 UTC	1200 UTC Day 3 to 1200 UTC Day 4
Day 1 Update	2200 UTC	0000 UTC Day 2 to 1200 UTC Day 2

10.2.4 Product Expiration Time

Product expires with the next issuance.

10.3 Technical Description

Charts should follow the format and content in this section.

10.3.1 MND Broadcast Line

Not applicable.

10.3.2 MND Header

Not applicable.

10.3.3 Content

These are graphical products that depict the instantaneous positions of frontal features (warm, cold, occluded, trough lines, etc.) and high and low pressure centers at the valid time of the product. In addition, significant weather hazards such as flash flooding, severe thunderstorms, winter weather, and critical fire weather are highlighted. Finally, general precipitation areas, such as rain and snow, are also depicted.

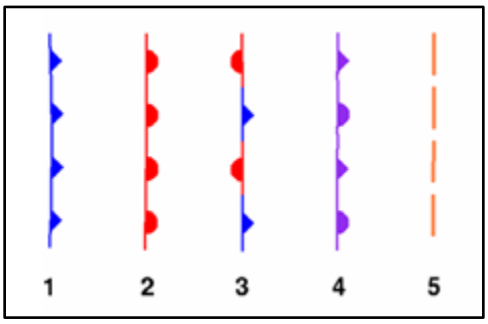

Figure 3: Symbols Used for National Forecast Charts

Key to Features:
1 – Cold Front; 2 – Warm Front; 3 – Stationary Front; 4 – Occluded Front; 5 – Trough (“TROF”)

10.3.4 Format

Product will follow the format as indicated in Figure 4, below.

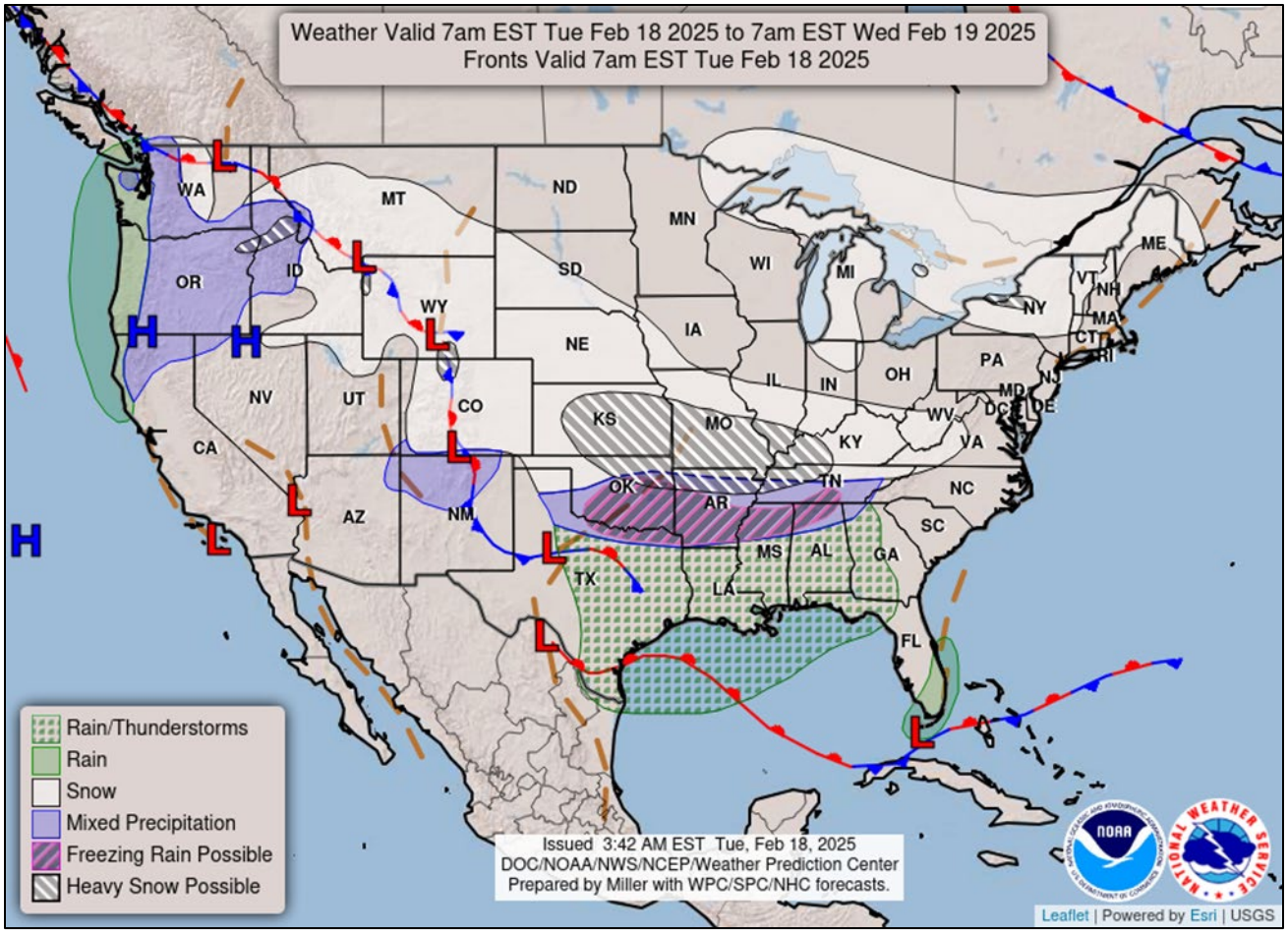

Figure 4: National Forecast Chart

The National Forecast Chart is available as a static image, and as an interactive map where the user can zoom and turn layers on and off. The interactive map is available at the following link: https://www.wpc.ncep.noaa.gov/NationalForecastChart/map.php.

10.4 Updates, Amendments, and Corrections

The Day 1 chart is updated routinely each day by 2200 UTC. The Day 2 and 3 charts can be updated when there are tropical systems on the map, to reflect the latest forecast position from NHC. Corrections are issued as necessary.

11 Surface Fronts and Pressure Charts (12-60 hours) (product categories 91F, 92F, 93F, 94F, 95F, 96F, 98F, 99F)

11.1 Mission Connection

WPC issues the surface fronts and pressure charts as guidance to CONUS NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. These products describe the location and strength of major meteorological features over the next 60 hours.

11.2 Issuance Guidelines

11.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

11.2.2 Issuance Criteria

These are routine, schedule-driven products.

11.2.3 Issuance Time and Valid Time

Refer to Table 5.

Table 5: Short Range Surface Fronts and Pressure Chart Issuance and Valid Times

WPC Short-Range Surface Fronts and Pressure Chart Schedule				
Issuance Time (UTC)	*Valid Time (UTC)*	*AWIPS ID*	*(WMO Header)*	***Product Description***
0300	0600 Day 1 1200 Day 1	RGB91F RBG92F	PPIA01 KWBC PPIC01 KWBC	06-hour fronts and pressures 12-hour fronts and pressures
0430	1800 Day 1 0000 Day 2	RBG93F RBG94F	PPID01 KWBC PPIE01 KWBC	18-hour fronts and pressures 24-hour fronts and pressures
0700	0600 Day 2 1200 Day 2 0000 Day 3 1200 Day 3	RBG95F RBG96F RBG98F RBG99F	PPIF01 KWBC PPIG01 KWBC PPII01 KWBC PPIK01 KWBC	30-hour fronts and pressures 36-hour fronts and pressures 48-hour fronts and pressures 60-hour fronts and pressures
1500	1800 Day 1 0000 Day 2	RGB91F RBG92F	PPIA01 KWBC PPIC01 KWBC	06-hour fronts and pressures 12-hour fronts and pressures
1630	0600 Day 2 1200 Day 2	RBG93F RBG94F	PPID01 KWBC PPIE01 KWBC	18-hour fronts and pressures 24-hour fronts and pressures
1900	1800 Day 2 0000 Day 3 1200 Day 3 0000 Day 4	RBG95F RBG96F RBG98F RBG99F	PPIF01 KWBC PPIG01 KWBC PPII01 KWBC PPIK01 KWBC	30-hour fronts and pressures 36-hour fronts and pressures 48-hour fronts and pressures 60-hour fronts and pressures

11.2.4 Product Expiration Time

Not applicable.

11.3 Technical Description

Charts should follow the format and content in this section.

11.3.1 MND Broadcast Line and Header

Not applicable.

11.3.2 Content

These are graphical products that depict the instantaneous positions of frontal features (warm, cold, occluded, trough lines) and high and low pressure centers at the valid time of the product. Shaded areas of precipitation that underlay the fronts and pressures are from NDFD and will automatically refresh to reflect the most current data.

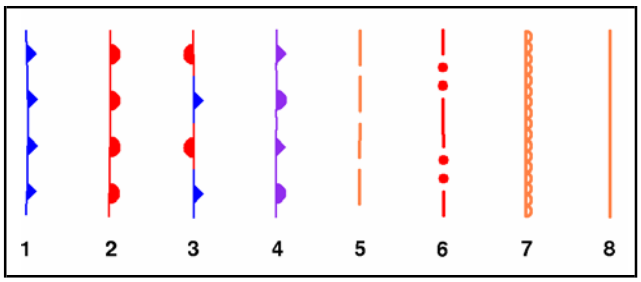

Figure 5: Symbols Used for Surface Fronts and Pressure Charts

Key to Features:
1 – Cold Front; 2 – Warm Front; 3 – Stationary Front; 4 – Occluded Front; 5 – Trough ("TROF"), also used to Depict Outflow Boundary ("OUTFLOW BNDRY"); 6 – Squall Line; 7 – Dry Line; 8 – Tropical Wave ("TRPCL WAVE")

11.3.3 Format

Product will follow the format as indicated in Figure 6.

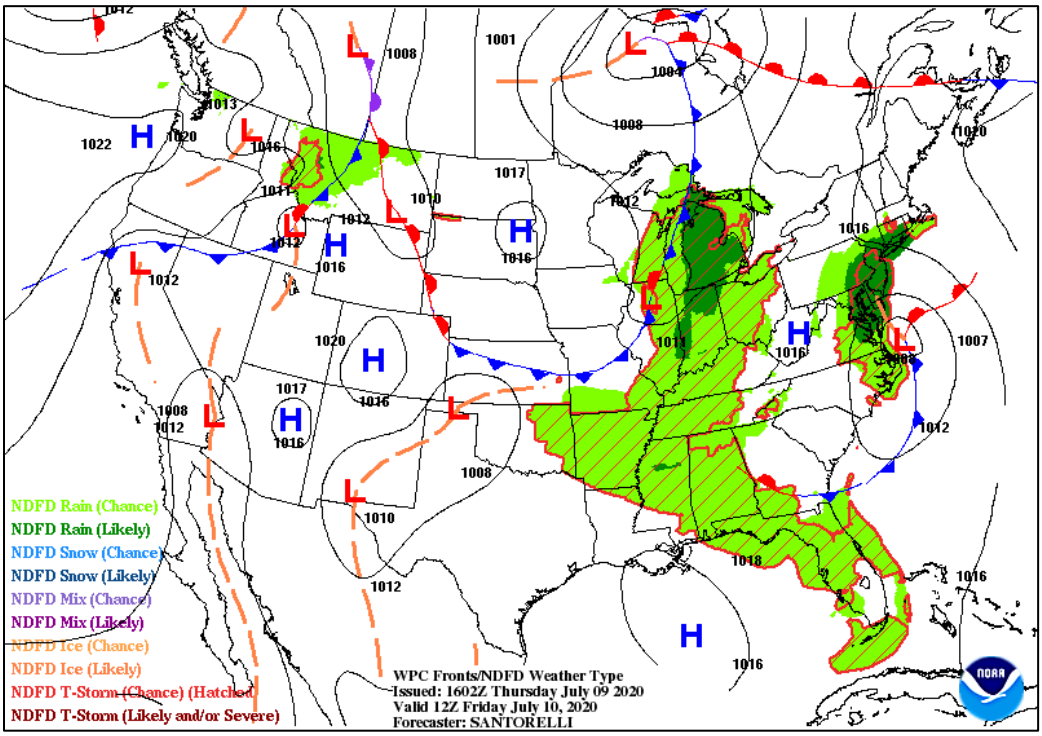

Figure 6: Surface Fronts and Pressure Chart

11.4 Updates, Amendments, and Corrections

Products are typically not updated or amended, with the exception of instances when NHC changes a tropical cyclone track or strength. Corrections are made as necessary.

12 Coded Surface Frontal Positions Forecast (product category CODSRP)

12.1 Mission Connection

WPC issues coded Surface Frontal Position Forecasts. These products are used by NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community.

12.2 Issuance Guidelines

12.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

12.2.2 Issuance Criteria

These are routine, schedule-driven products.

12.2.3 Issuance Time and Valid Time

Refer to Table 6.

Table 6: Coded Surface Frontal Position Product Schedule

WPC Coded Surface Frontal Position Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0430	1200 Day 1 0000 Day 2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
0700	1800 Day 1 0600 Day 2 1200 Day 2 0000 Day 3	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
1630	0000 Day 2 1200 Day 2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
1900	0600 Day 2 1800 Day 2 0000 Day 3 1200 Day 3	CODSRP	FSUS02 KWBC	Coded description of frontal forecast

12.2.4 Product Expiration Time

Not applicable.

12.3 Technical Description

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

12.3.1 MND Broadcast Line

Not applicable.

12.3.2 MND Header

The MND header is CODED SURFACE FRONTAL POSITIONS FORECAST.

12.3.3 Content

These are text bulletins that describe the latitudes and longitudes (to the nearest degree) of vertices along the forecast frontal positions, along with the positions of highs and lows and pressures. These correspond directly with the 92F, 94F, 96F, 98F products described in Section 11. These text messages allow the private sector, academia, and the media to plot the location of these weather systems.

Here is specific information on how to decode / interpret the bulletin:

44109:	44°N Latitude, 109°W Longitude
HIGHS:	High Pressure Centers
LOWS:	Low Pressure Centers
COLD:	Cold Front
WK:	Weak
WARM:	Warm Front
STNRY:	Stationary Front
TROF:	Surface Boundary (*can be a trough, outflow boundary, squall line, or dry line*)
OCFNT:	Occluded Front

The valid time is decoded MMDDHH.

12.3.4 Format

The product will follow the format shown below. Pressure values are indicated by “p,” latitude values are indicated by “A,” and longitude values are indicated by “O.”

```
FSUS02 KWBC ddhhmm
CODSRP

CODED SURFACE FRONTAL POSITIONS FORECAST
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
TIME AM/PM TIMEZONE DAY MON dd yyyy

hhHR PROG VALID mmddhhZ
HIGHS pppp AAOO pppp AAOOO (sequence repeats as necessary; note that
longitude varies in length depending on whether it is east or west of 100°W)
LOWS pppp AAOO pppp AAOO (sequence repeats as necessary)
TROF AAOO AAOOO AAOOO AAOOO (sequence repeats as necessary)
COLD WK AAOOO AAOOO AAOOO AAOOO (sequence repeats as necessary)
COLD AAOO AAOO AAOO AAOO (sequence repeats as necessary)

(The product will include as many lines as needed to convey all the features
included on a particular forecast chart)

(Multiple forecast hours can be included in the same product. The block of
Formatted text just repeats, beginning with hhHR PROG VALID mmddhhZ.)

$$
```

12.4 Updates, Amendments, and Corrections

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

13 Days 3 - 7 Surface Progs (product categories 9JH-9NH)

13.1 Mission Connection

WPC issues Days 3 through 7 Surface Progs for the CONUS as guidance to NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. These products describe the location of surface fronts and pressures for Days 3 through 7.

13.2 Issuance Guidelines

13.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products. Additional gridded forecast guidance is generated using AWIPS Graphical Forecast Editor (GFE).

13.2.2 Issuance Criteria

There are routine, schedule-driven products.

13.2.3 Issuance and Valid Time

Refer to Table 7.

Table 7: Day 3-7 Surface Prog Product Schedule

WPC Day 3-7 Surface Prog Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0430, 1630	1200 Day 3	RBG9JH	PPHK01 KWBC	Medium Range Day 3 Surface Forecast
0430, 1630	1200 Day 4	RBG9KH	PPHM01 KWBC	Medium Range Day 4 Surface Forecast
0430, 1630	1200 Day 5	RBG9LH	PPHO01 KWBC	Medium Range Day 5 Surface Forecast
0430, 1630	1200 Day 6	RBG9MH	PPTG98 KWBC	Medium Range Day 6 Surface Forecast
0430, 1630	1200 Day 7	RBG9NH	PPTR98 KWBC	Medium Range Day 7 Surface Forecast

13.2.4 Product Expiration Time

Not applicable.

13.3 Technical Description

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

13.3.1 MND Broadcast Line

Not applicable.

13.3.2 MND Header

Not applicable.

13.3.3 Content

These are graphical products that depict the locations of surface fronts and pressures over the CONUS, and adjacent portions of the Pacific and Atlantic Oceans, for Days 3 through 7. WPC also routinely produces gridded forecast guidance for the CONUS that includes temperature, dew point, winds, cloud cover, probability of precipitation, weather type, quantitative precipitation forecasts (QPF; see NWSI 10-930), and a Winter Weather Outlook (WWO; see NWSI 10-514). All Days 3 to 7 forecast products are available at the following link: https://www.wpc.ncep.noaa.gov/medr/medr.shtml.

Additionally, WPC issues Days 3 to 7 surface progs for a large portion of the Northern Hemisphere once per day by 2130 UTC, incorporating the final progs for Alaska (section 14).

13.3.4 Format

Product will follow the format indicated in Figures 7 and 8 below.

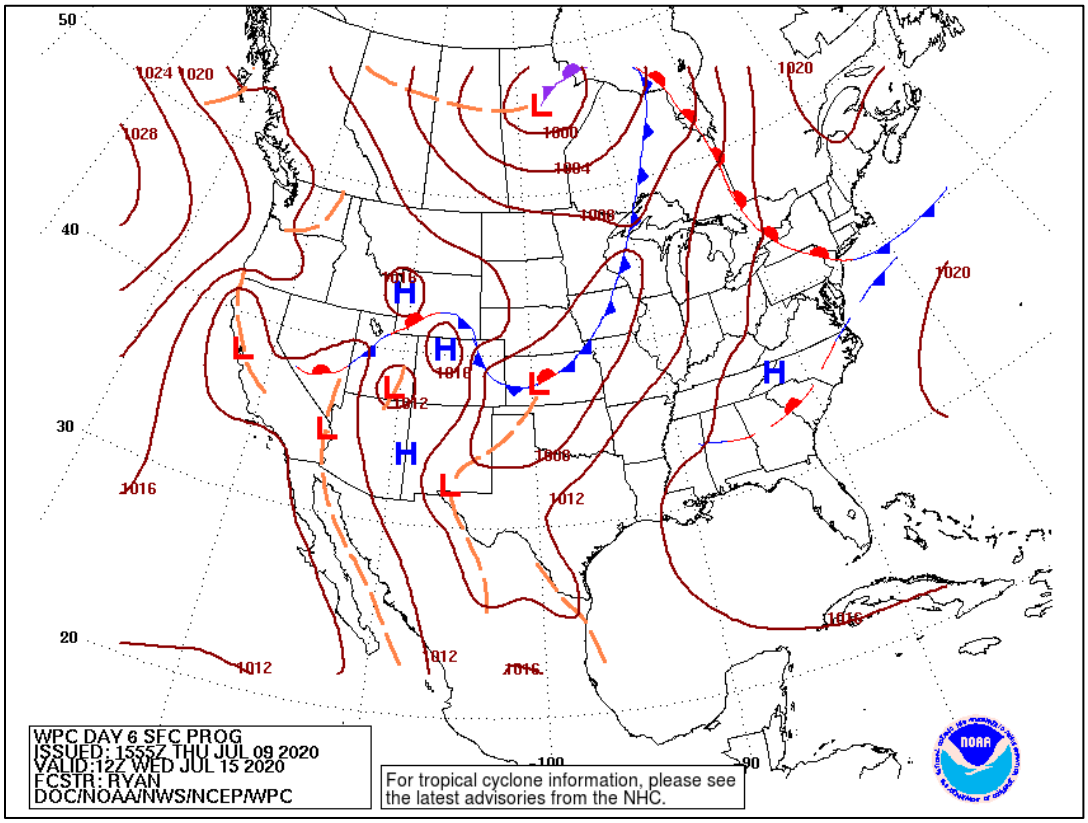

Figure 7: Day 3 to 7 Surface Prog Example (CONUS)

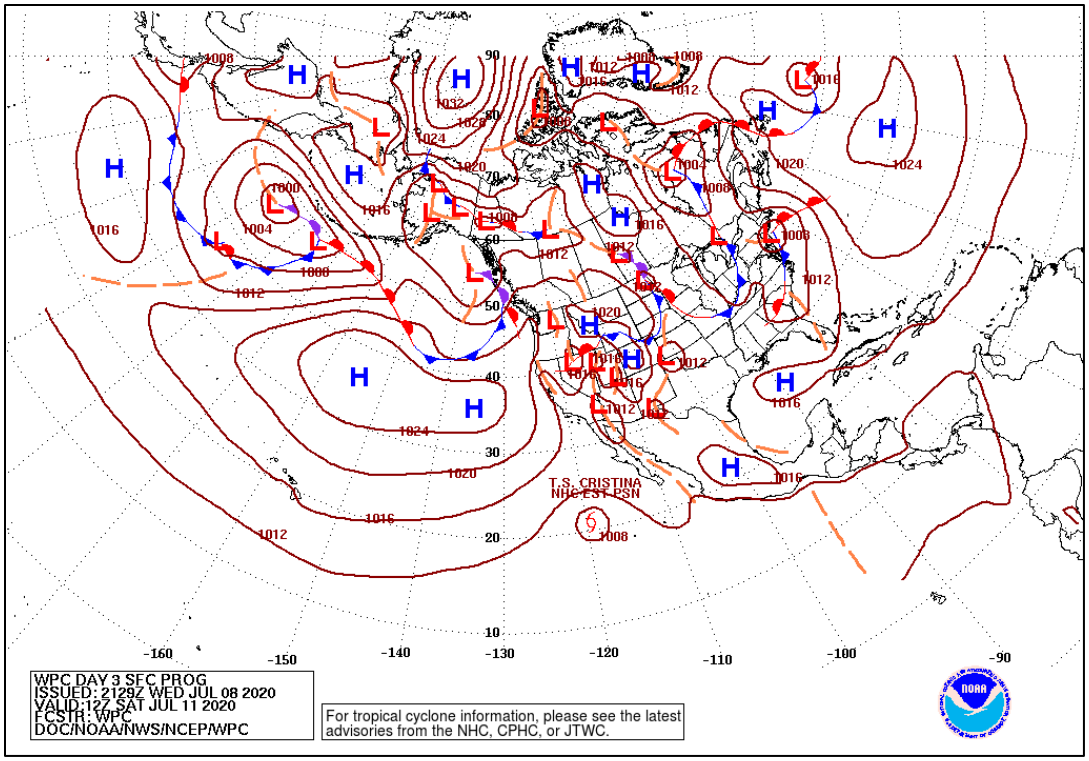

Figure 8: Day 3 to 7 Surface Prog Example (Northern Hemisphere)

13.4 Updates, Amendments, and Corrections

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

14 Days 4 – 8 Alaska Surface Progs (no product ID or Header)

14.1 Mission Connection

WPC issues Days 4 through 8 Surface Progs for Alaska as guidance to NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. These products describe the location of surface fronts and pressures for Days 4 through 8.

14.2 Issuance Guidelines

14.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products. Additional gridded forecast guidance is generated using AWIPS GFE.

14.2.2 Issuance Criteria

These are routine, schedule-driven products.

14.2.3 Issuance and Valid Time

Refer to Table 8.

Table 8: Day 4-8 Alaska Surface Progs Product Schedule

WPC Day 4-8 Alaska Surface Progs Schedule		
Issuance Time	***Valid Time***	***Product Description***
2030 UTC	1200 UTC Day 4	Alaska Medium Range Day 4 Surface Forecast
2030 UTC	1200 UTC Day 5	Alaska Medium Range Day 5 Surface Forecast
2030 UTC	1200 UTC Day 6	Alaska Medium Range Day 6 Surface Forecast
2030 UTC	1200 UTC Day 7	Alaska Medium Range Day 7 Surface Forecast
2030 UTC	1200 UTC Day 8	Alaska Medium Range Day 8 Surface Forecast

14.2.4 Product Expiration Time

Not applicable.

14.3 Technical Description

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

14.3.1 MND Broadcast Line

Not applicable.

14.3.2 MND Header

Not applicable.

14.3.3 Content

These are graphical products that depict the locations of surface fronts and pressures over Alaska, and adjacent portions of the Pacific and Arctic Oceans, for Days 4 through 8. WPC also routinely produces gridded forecast guidance for Alaska that includes temperature, dew point, winds, cloud cover, probability of precipitation, and weather type. All Days 4 to 8 forecast products for Alaska are available at the following link: https://www.wpc.ncep.noaa.gov/alaska/akmedr.shtml.

14.3.4 Format

Product will follow the format indicated in Figure 9 below.

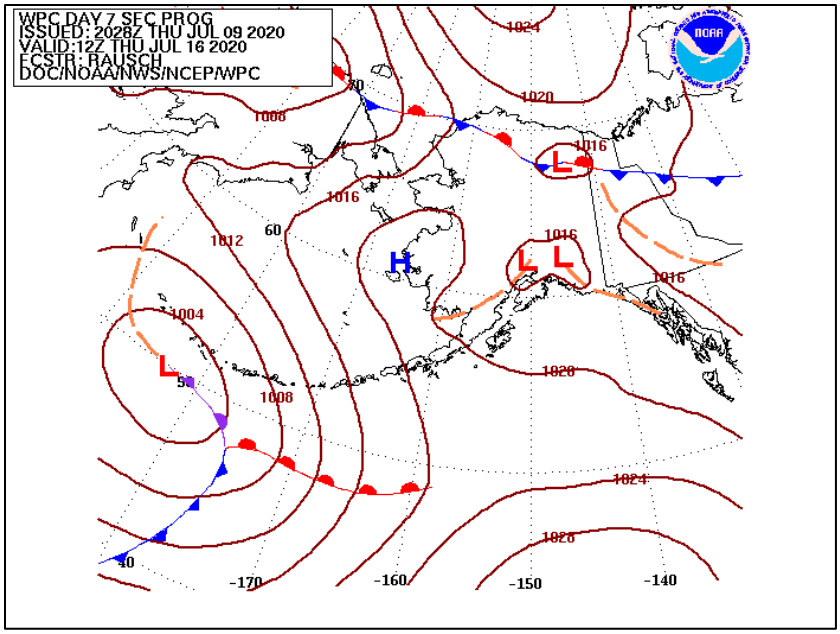

Figure 9: Day 4 to 8 Alaska Surface Prog Example

14.4 Updates, Amendments, and Corrections

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

15 Days 3 - 7 Temp./Precipitation Forecast (product categories 93P-97P)

15.1 Mission Connection

WPC issues the Days 3 - 7 Temperature/Precipitation Forecast as guidance to CONUS NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community.

15.2 Issuance Guidelines

15.2.1 Creation Software

WPC uses National Centers AWIPS (N-AWIPS) software to generate these products.

15.2.2 Issuance Criteria

These are routine, schedule-driven products.

15.2.3 Issuance and Valid Time

Refer to Table 9.

Table 9: Days 3-7 Temperature/Precipitation Forecast Product Schedule

WPC Day 3-7 Temperature/Precipitation Forecast Anomalies Product Schedule				
Issuance Time (UTC)	***Valid Date***	***AWIPS ID***	***(WMO Header)***	***Product Description***
0400, 1600	Day 3	RBG93P	PYWK43 KWBC	Day 3 Temp./Precipitation Forecast

0400, 1600	Day 4	RBG94P	PYWM44 KWBC	Day 4 Temp./Precipitation Forecast
0400, 1600	Day 5	RBG95P	PYWO45 KWBC	Day 5 Temp./Precipitation Forecast
0400, 1600	Day 6	RBG96P	PYWQ46 KWBC	Day 6 Temp./Precipitation Forecast
0400, 1600	Day 7	RBG97P	PYWS98 KWBC	Day 7 Temp./Precipitation Forecast

15.2.4 Product Expiration Time

Not applicable.

15.3 Technical Description

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

15.3.1 MND Broadcast Line

Not applicable.

15.3.2 MND Header

Not applicable.

15.3.3 Content

These are graphical products that depict the Days 3 - 7 temperature and probability of precipitation (PoP) for 93 stations over the CONUS. The graphical product is accompanied by a text file that lists the forecast values in a tabular format, including anomalies of temperatures and PoP. The text file can be found at this link: https://www.wpc.ncep.noaa.gov/medr/newlistfile.

15.3.4 Format

Product will follow the format indicated in Figure 10 below.

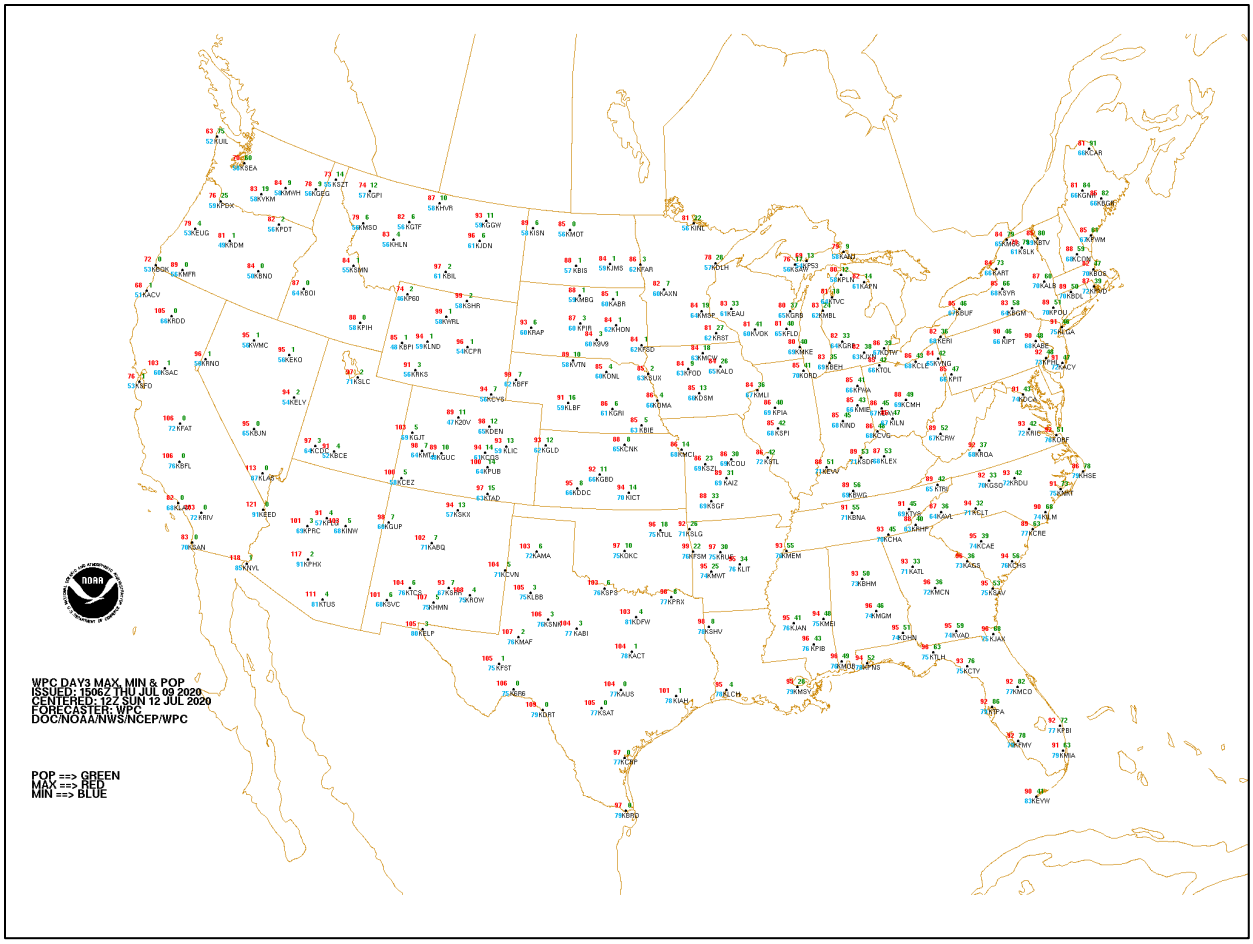

Figure 10: Days 3-7 Temperature/Precipitation Forecast Chart Example

15.4 Updates, Amendments, and Corrections

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

16 5-Day Mean Max/Min Temperature Anomalies (product categories 95A, 95B)

16.1 Mission Connection

WPC issues the 5-day Mean Maximum and Minimum Temperature Anomaly Charts as guidance to CONUS NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. These products describe the maximum and minimum temperature anomalies from climatology over the next five days.

16.2 Issuance Guidelines

16.2.1 Creation Software

WPC uses National Centers AWIPS (N-AWIPS) software to generate these products.

16.2.2 Issuance Criteria

These are routine, schedule-driven products.

16.2.3 Issuance and Valid Time

Refer to Table 10.

Table 10: Mean 5 Day Max/Min Temperature Anomaly Product Schedule

WPC Mean 5-Day Max/Min Temperature Anomalies Product Schedule				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***(WMO Header)***	***Product Description***
1000	1200 Day 1 - 1200 Day 5	RBG95A	PTIO52 KWBC	5 - Day Mean Maximum Temperature Anomaly (MOS)
1000	1200 Day 1 - 1200 Day 5	RBG95B	PTIO53 KWBC	5 - Day Mean Minimum Temperature Anomaly (MOS)

16.2.4 Product Expiration Time

Not applicable.

16.3 Technical Description

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

16.3.1 MND Broadcast Line and Header

Not applicable.

16.3.2 Content

These are graphical products that depict the mean GFS MOS maximum and minimum temperature anomalies in degrees Fahrenheit from climatology.

16.3.3 Format

Products will follow the format indicated in Figures 11 and 12 below.

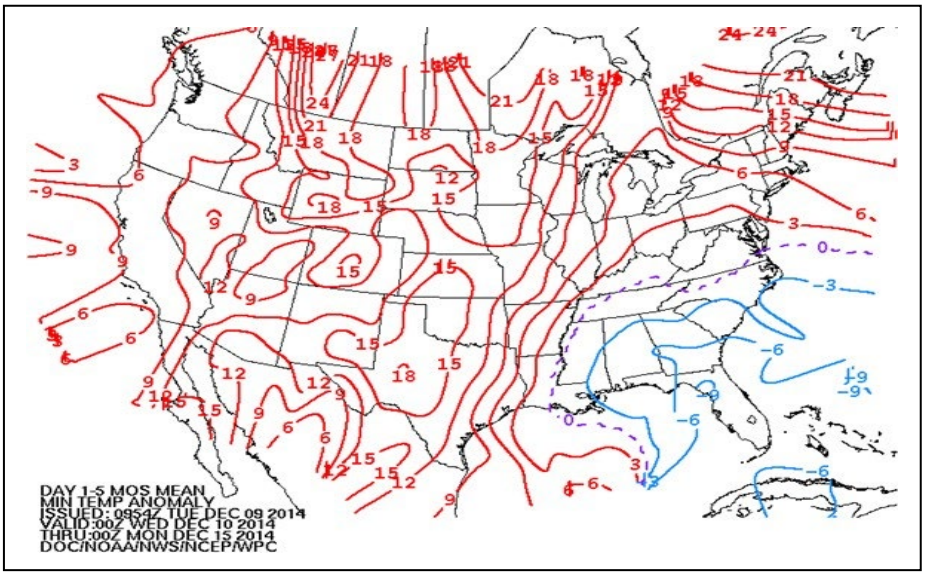

Figure 11: Mean 5-Day Minimum Temperature Anomaly (MOS)

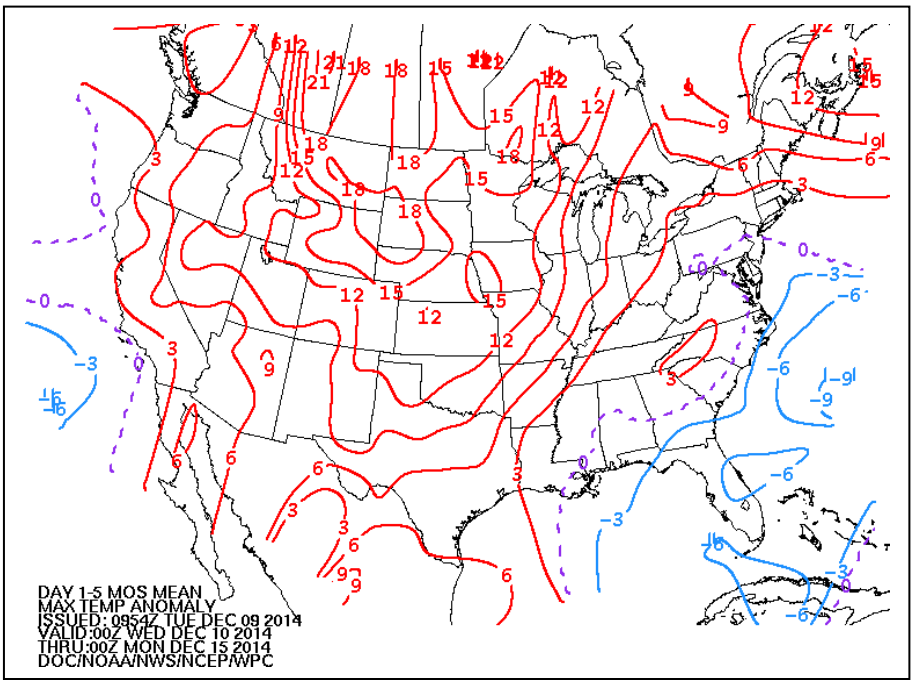

Figure 12: Mean 5-Day Maximum Temperature Anomaly (MOS)

16.4 Updates, Amendments, and Corrections

These products are not updated or amended. Corrections are issued as necessary.

17 Ultraviolet Index (UVI) Forecast (product category UVICAC)

17.1 Mission Connection

The Climate Prediction Center (CPC) issues a UV Index (UVI) Forecast for 58 U.S. cities daily. CPC generates the UVI Forecast to help people understand the effects on their skin of their exposure to the sun's ultraviolet radiation. This product is used by the media and supports public weather programs.

17.2 Issuance Guidelines

17.2.1 Creation Software

CPC uses National Centers AWIPS (N-AWIPS) software to generate these products.

17.2.2 Issuance Criteria

This is a routine, schedule-driven product.

17.2.3 Issuance Time

The UVI product is issued daily at approximately 1800 UTC.

17.2.4 Valid Time

The product is valid for solar noon (approximately 12 noon local standard time or 1PM local daylight time), Day 2.

17.2.5 Product Expiration Time

Product expires after valid time.

17.3 Technical Description

The UVI product should follow the format and content described below.

17.3.1 MND Broadcast Line

Not applicable.

17.3.2 MND Header

The UVI MND header is NOAA/EPA ULTRAVIOLET INDEX /UVI/ FORECAST.

17.3.3 Content

Both the text-based and web-based products specify the forecast UVI for solar noon, Day 2.

17.3.4 Format

```
NOAA/EPA ULTRAVIOLET INDEX /UVI/ FORECAST
NWS CLIMATE PREDICTION CENTER COLLEGE PARK MD
533 PM SUN MAR 29 2020

VALID MAR 30 2020 AT SOLAR NOON /APPROXIMATELY NOON
LOCAL STANDARD TIME OR 100 PM LOCAL DAYLIGHT TIME/

THE UV INDEX IS CATEGORIZED BY THE WORLD HEALTH ORGANIZATION
AS FOLLOWS:
           UVI             EXPOSURE LEVEL
           0 1 2              LOW
           3 4 5              MODERATE
           6 7                HIGH
           8 9 10             VERY HIGH
           11 AND GREATER     EXTREME

FOR HEALTH RELATED ISSUES GO TO WWW.EPA.GOV/SUNSAFETY
FOR TECHNICAL INFORMATION ABOUT THE UV INDEX....
GO TO THE NATIONAL WEATHER SERVICE UV INDEX WEB PAGE:
WWW.CPC.NCEP.NOAA.GOV/PRODUCTS/STRATOSPHERE/UV_INDEX

CITY               STATE  UVI       CITY               STATE  UVI
ALBUQUERQUE          NM     6       LITTLE ROCK          AR     6
ANCHORAGE            AK     2       LOS ANGELES          CA     7
ATLANTIC CITY        NJ     4       LOUISVILLE           KY     6
ATLANTA              GA     7       MEMPHIS              TN     6
BALTIMORE            MD     3       MIAMI                FL    11
BILLINGS             MT     5       MILWAUKEE            WI     4
BISMARCK             ND     4       MINNEAPOLIS          MN     4
BOISE                ID     2       MOBILE               AL     9
```

BOSTON	MA	1	NEW ORLEANS	LA	9
BUFFALO	NY	1	NEW YORK	NY	4
BURLINGTON	VT	2	NORFOLK	VA	6
CHARLESTON	WV	5	OKLAHOMA CITY	OK	3
CHARLESTON	SC	7	OMAHA	NE	5
CHEYENNE	WY	5	PHILADELPHIA	PA	4
CHICAGO	IL	3	PHOENIX	AZ	8
CLEVELAND	OH	2	PITTSBURGH	PA	1
CONCORD	NH	1	PORTLAND	ME	1
DALLAS	TX	3	PORTLAND	OR	2
DENVER	CO	5	PROVIDENCE	RI	2
DES MOINES	IA	5	RALEIGH	NC	6
DETROIT	MI	2	SALT LAKE CITY	UT	5
DOVER	DE	4	SAN FRANCISCO	CA	6
HARTFORD	CT	2	SAN JUAN	PU	12
HONOLULU	HI	10	SEATTLE	WA	3
HOUSTON	TX	6	SIOUX FALLS	SD	5
INDIANAPOLIS	IN	4	ST. LOUIS	MO	6
JACKSON	MS	7	TAMPA	FL	10
JACKSONVILLE	FL	7	WASHINGTON	DC	3
LAS VEGAS	NV	6	WICHITA	KS	6

CPC also generates a graphical product depicting the same information and posts it on the Web. See Figure 13.

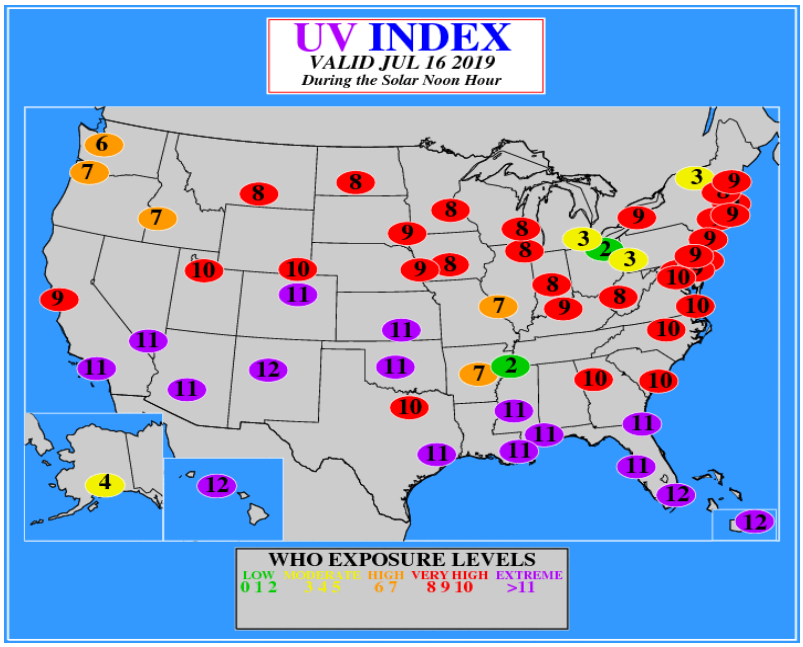

Figure 13: Ultraviolet Index Map

17.4 Updates, Amendments, and Corrections

No updates or amendments are issued for this product. CPC will correct for format and grammatical errors as required.

18 Selected Cities Forecast (product categories SCS [01-04])

18.1 Mission Connection

The NWS Telecommunications Operations Center (TOC) began issuing the Selected Cities Forecast (SCS) in January 2009. The SCS provides the observed maximum and minimum temperatures, observed precipitation, and forecast weather and temperatures for selected cities in the U.S., Puerto Rico and the U.S. Virgin Islands. This product is heavily used by the print media and supports the public weather program.

18.2 Issuance Guidelines

18.2.1 Creation Software

TOC uses National Centers AWIPS (N-AWIPS) software to generate these products.

18.2.2 Issuance Criteria

This is a routine, schedule-driven product.

18.2.3 Issuance Time

0100 and 1300 UTC.

18.2.4 Valid Time

1200 UTC Day 1 to 1200 UTC Day 2.

18.2.5 Product Expiration Time

Product expires with the next issuance.

18.3 Technical Description

The Selected Cities Forecast should follow the format and content described in this section.

18.3.1 MND Broadcast Line

Not applicable.

18.3.2 MND Header

The SCS header is SELECTED CITIES WEATHER SUMMARY AND FORECASTS.

18.3.3 Content

This is a tabular text product consisting of the previous day's maximum and minimum temperatures and observed liquid precipitation, along with forecast weather and temperatures for the next two days for selected cities in the U.S., Puerto Rico and the U.S. Virgin Islands. The abbreviated forecasts are derived from the National Digital Forecast Database (NDFD) grids issued by NWS Weather Forecast Offices (WFOs) and Weather Service Offices (WSOs). The last part (SCS04, FPUS20 KWBN) has a final section that gives the highest and lowest temperatures observed in the CONUS (also see section 19). If a city is missing, it is noted as "MISG" in the weather category and "MM/MM" for the maximum and minimum temperature.

18.3.4 Format

Example…Morning Issuance:

```
FPUS20
KWBN
041250
SCS01
SELECTED CITIES WEATHER SUMMARY AND
FORECASTS...PART 1 OF 4 NWS/NDFD TELECOMMUNICATION
OPERATIONS CENTER SILVER SPRING MD 850 AM EDT FRI
JUN 04 2010

TEMPERATURES INDICATE DAYTIME
HIGH...NIGHTTIME LOW B INDICATES
TEMPERATURES BELOW ZERO
PRECIPITATION FOR 24 HOURS ENDING AT 8 AM EDT


                                FORECAST        FORECAST
               THU...JUN 03     FRI....JUN 04   SAT....JUN 05
CITY           HI/LO   PCPN     WEA     HI/LO   WEA     HI/LO

ABILENE TX     89  68           SUNNY   96/70   SUNNY  100/76
AKRON CANTON   78  61   .14     TSTRMS  82/66   TSTRMS  80/64
ALBANY NY      80  61   .08     PTCLDY  82/65   TSTRMS  82/59
ALBUQUERQUE    91  58           SUNNY   95/64   SUNNY   99/67
ALLENTOWN      85  63   .01     PTCLDY  88/68   MOCLDY  86/66
AMARILLO       86  64           SUNNY   95/64   SUNNY   99/66
```

Key to Weather Terminology

```
PTCLDY = Partly Cloudy                RNSNOW = Rain and Snow
MOCLDY = Mostly Cloudy                BLZZRD = Blizzard
VRYHOT = Very Hot                     BLGSNO = Blowing Snow
VRYCLD = Very Cold                    TSTRMS = Thunderstorms
SNOSHW = Snow Showers                 SHWRS = Rain Showers
DRZL = Drizzle                        FZRAIN = Freezing Rain
FLRRYS = Snow Flurries                FZDRZL = Freezing Drizzle
```

Cities Used in Selected Cities Products: Cities for SCS01

```
ABILENE TX              BATON ROUGE LA          CHARLESTON SC
AKRON/CANTON OH         BILLINGS MT             CHARLESTON WV
ALBANY NY               BIRMINGHAM AL           CHARLOTTE NC
ALBUQUERQUE NM          BISMARCK ND             CHATTANOOGA TN
ALLENTOWN PA            BOISE ID                CHEYENNE WY
AMARILLO TX             BOSTON MA               CHICAGO IL
ANCHORAGE AK            BRIDGEPORT CT           CINCINNATI OH
ASHEVILLE NC            BROWNSVILLE TX          CLEVELAND OH
ATLANTA GA              BUFFALO NY              COLORADO SPGS CO
ATLANTIC CITY NJ        BURLINGTON VT           COLUMBIA SC
AUSTIN TX               CARIBOU ME              COLUMBUS GA
BALTIMORE MD            CASPER WY               COLUMBUS OH
```

Cities for SCS02

CONCORD NH
CORPUS CHRISTI TX
DALLAS FT WORTH TX
DAYTON OH
DAYTONA BEACH FL
DENVER CO
DES MOINES IA
DETROIT MI
DULUTH MN
EL PASO TX
ELKINS WV
ERIE PA
EUGENE OR
EVANSVILLE IN
FAIRBANKS AK
FARGO ND
FLAGSTAFF AZ
FLINT MI
FORT SMITH AK
FORT WAYNE IN
FRESNO CA
GOODLAND KS
GRAND JUNCTION CO
GRAND RAPIDS MI
GREAT FALLS MT
GREEN BAY WI
GREENSBORO NC
HARRISBURG PA
HARTFORD CT SPGFLD MA
HELENA MT
HONOLULU HI
HOUSTON INTCNTL ARPT TX
HUNTSVILLE AL
INDIANAPOLIS IN
JACKSON MS
JACKSONVILLE FL
JUNEAU AK
KANSAS CITY MO
KEY WEST FL
KNOXVILLE TN
LAKE CHARLES LA
LANSING MI
LAS VEGAS NV
LEXINGTON KY

Cities for SCS03

LINCOLN IL
LITTLE ROCK AR
LOS ANGELES CA
LOUISVILLE KY
LUBBOCK TX
MACON GA
MADISON WI
MEDFORD OR
MEMPHIS TN
MIAMI BEACH FL
MIDLAND ODESSA TX
MILWAUKEE WI
MISSOULA MT
MPLS ST PAUL MN
MOBILE AL
MONTGOMERY AL
NASHVILLE TN
NEW ORLEANS LA
NEW YORK CITY NY
NEWARK NJ
NORFOLK VA
NORTH PLATTE NE
OKLAHOMA CITY OK
OMAHA NE
ORLANDO FL
PADUCAH KY
PENDLETON OR
PEORIA IL
PHILADELPHIA PA
PHOENIX AZ
PITTSBURGH PA
POCATELLO ID
PORTLAND ME
PORTLAND OR
PROVIDENCE RI
PUEBLO CO
RALEIGH DURHAM NC
RAPID CITY SD
RENO NV
RICHMOND VA
ROANOKE VA
ROCHESTER NY
ROCKFORD IL
SACRAMENTO CA
ST LOUIS MO
ST. PETERSBURG FL
ST THOMAS VI

Cities for SCS04

SALEM OR
SALT LAKE CITY UT
SAN ANGELO TX
SAN ANTONIO TX
SAN DIEGO CA
SAN FRANCISCO CA
SAN JOSE CA
SAN JUAN PR
SANTA FE NM
ST STE MARIE MI
SAVANNAH GA
SEATTLE WA
SHREVEPORT LA
SIOUX CITY IA
SIOUX FALLS SD
SOUTH BEND IN
SPOKANE WA
SPRINGFIELD IL
SPRINGFIELD MO
SYRACUSE NY
TALLAHASSEE FL
TAMPA FL
TOLEDO OH
TOPEKA KS
TUCSON AZ
TULSA OK
TUPELO MS
WACO TX
WASHINGTON DC
W PALM BEACH FL
WICHITA KS
WICHITA FALLS TX
WILKES BARRE PA
WILMINGTON DE
YAKIMA WA
YOUNGSTOWN OH
YUMA AZ

18.4 Updates, Amendments, and Corrections

These products are not updated or amended. The TOC will correct for format and grammatical errors as required.

19 National High and Low Temperature for the Contiguous United States (product category SCS04)

19.1 Mission Connection

WPC issues the High and Low Temperature product to provide locations of the warmest and coldest temperatures, via reliable weather observation networks and NWS vetted reports, across the Contiguous United States (CONUS) over the most recent 24 hour period. This guidance is utilized by NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community.

19.2 Issuance Guidelines

19.2.1 Creation Software

WPC uses National Centers AWIPS (N-AWIPS) software to generate these products.

19.2.2 Issuance Criteria

This is a routine, schedule-driven product.

19.2.3 Issuance and Valid Times

Refer to Table 11.

Table 11: National High and Low Temperature Product Schedule

WPC National High and Low Temperature Product Schedule		
Issuance Time	***Valid Time***	***Product Description***
0050 UTC	0000 UTC	Reports the new (since local midnight) high temperature extreme and confirms the existing low temperature extreme.
0650 UTC	0600 UTC	Updates the (through local midnight) high temperature extreme and confirms yesterday's low temperature extreme.
1250 UTC	1200 UTC	Reports the new (since local midnight) low temperature extreme and confirms yesterday's high temperature extreme.
1850 UTC	1800 UTC	Updates the (since local midnight) low temperature extreme, and confirms yesterday's high temperature extreme.

19.2.4 Product Expiration Time

Product expires with the next issuance.

19.3 Technical Description

The National High and Low Temperature product should follow the format and content described in this section.

19.3.1 MND Broadcast Line

Not applicable.

19.3.2 MND Header

Not applicable.

19.3.3 Content

These are text bulletins that list the extreme maximum and extreme minimum temperatures reported at observation sites across the CONUS, generally over the past 24 hours. If more than one station is tied for an extreme value, all of those stations will be listed. The national high and low are appended on the end of the Selected Cities Forecast product (SCS04; section 18), but are also available at the following web link: https://www.wpc.ncep.noaa.gov/discussions/hpcdiscussions.php?disc=nathilo.

19.3.4 Format

For the web display of the National High and Low Temperature, the product will follow the format indicated below, with "tt" indicating the reported temperature.

```
National High and Low Temperature (for the contiguous United States)
NWS Weather Prediction Center, College Park MD
Issued Time am/pm EDT Day, Month dd, yyyy

High Temperature for Day, Month dd, yyyy
(as received by hh am/pm EDT Month dd)
tt at City, ST (list of cities will continue for tied stations)

Low Temperature for Day, Month dd, yyyy
(as received by hh am/pm EDT Month dd)
tt at City, ST (list of cities will continue for tied stations)
```

19.4 Updates, Amendments, and Corrections

This product is not routinely updated or amended. WPC will correct for format and grammatical errors as required.

20 Canadian Urban Forecasts (product category CSCNMC)

20.1 Mission Connection

The product is generated by the Meteorological Service of Canada (MSC), and disseminated internationally to U.S. public interests.

20.2 Issuance Guidelines

20.2.1 Creation Software

The NWS Telecommunications Gateway receives this product and re-transmits it to domestic

users.

20.2.2 Issuance Criteria

This is a routine, schedule-driven product.

20.2.3 Issuance Time

This product is issued daily at approximately 0730 UTC and 1930 UTC.

20.2.4 Valid Time

Through Day 2.

20.2.5 Product Expiration Time

Product expires with the next issuance.

20.3 Technical Description

The product follows the format and content described in this section.

20.3.1 MND Broadcast Line

Not applicable.

20.3.2 MND Header

The MND header for this product is CANADIAN URBAN FORECASTS.

20.3.3 Content

This product contains tabular arrays of short forecasts and predicted high and low temperatures (in degrees Celsius) for numerous Canadian cities.

20.3.4 Format

Example:

```
CANADIAN URBAN FORECASTS
TEMPERATURE IN DEGREES CELSIUS
CITY           FORECAST                  FORECAST
               FRIDAY                    SATURDAY
               WEA            HI         WEA                   LO/HI
IQALUIT        WINDY          M06        INCRG CLOUDINESS      M12/00
YELLOWKNIFE    MAINLY SUNNY   8          VARIABLE CLOUD        M02/8
WHITEHORSE     MAINLY CLOUDY  8          PARTLY CLOUDY         M03/7
```

Cities for CSCNMC

CALGARY AB	OTTAWA ONT	THUNDER BAY ON
CHARLOTTETOWN PEI	QUEBEC QUE	TORONTO ON
EDMONTON AB	REGINA SK	VANCOUVER BC
FREDERICTON NB	SAINT JOHN NB	VICTORIA BC
HALIFAX NS	SASKATOON SK	WINDSOR ON

IQALUIT NU	ST JOHNS NFLD	WINNIPEG MB
KAMLOOPS BC	SUDBURY ON	WHITEHORSE YT
MONTREAL QUE	SYDNEY NS	YELLOWKNIFE NT

20.4 Updates, Amendments, and Corrections

Not applicable.

APPENDIX A

Text Product Examples

1 Introduction

This appendix provides users with examples of text versions of national public weather products.

2 Short Range Forecast Discussion

```
Short Range Forecast Discussion
NWS Weather Prediction Center College Park MD
226 AM EDT Thu Jul 09 2020

Valid 12Z Thu Jul 09 2020 - 12Z Sat Jul 11 2020

...Severe thunderstorms and flash flooding possible for the central U.S.
today...

...More hot temperatures for the Great Lakes as well as West Texas...

...Low pressure along the North Carolina coast continues to be monitored
by the National Hurricane Center for tropical/subtropical development...

A potent frontal system will move through the Corn Belt today into a warm
and juicy air mass. This will support the persistence and development of
showers and thunderstorms, some of which may be severe and could produce
local flash flooding and ponding on roadways. Temperatures into the upper
80s to mid 90s may approach record highs. The system will move into the
central Great Lakes and Midwest on Friday with scattered showers and
thunderstorms and a bit cooler temperatures.

Across the South, a lingering frontal boundary will provide the focus for
scattered showers and a few thunderstorms from eastern Texas to the Gulf
and Atlantic coasts. Along the North Carolina coast, an area of low
pressure will lift slowly northeastward and could possibly transition into
a subtropical or tropical system. The National Hurricane Center continues
to monitor this area but expected impacts, regardless of classification,
will be moderate to locally heavy rainfall near and north of its track,
gusty winds, and rough surf along the coast. Abundant cloudiness and
increasing northeast winds will keep temperatures in the low to mid 80s.

Over the Pacific Northwest, temperatures will trend a bit milder today and
then Friday, but remain cooler than normal. Hot temperatures over western
Texas and eastern New Mexico may approach records for at least the new two
days (and likely beyond). The Desert Southwest will be hotter still, with
afternoon temperatures soaring into the 110s each afternoon, with lower
120s likely at Death Valley by Friday into the weekend.

Fracasso

Graphics available at www.wpc.ncep.noaa.gov/basicwx/basicwx_ndfd.php
```

3 Extended Forecast Discussion

Extended Forecast Discussion
NWS Weather Prediction Center College Park MD
213 PM EDT Mon Jul 06 2020

Valid 12Z Thu Jul 09 2020 - 12Z Mon Jul 13 2020

...Guidance/Predictability Assessment...

Smaller scale differences remain with respect to an Eastern Seaboard coastal low currently being monitored by NHC. The 06z GFS was noticeably faster/more progressive with the low, but the latest 12z run this morning looked better. WPC favors a blend of the ECMWF with the CMC which are closer and more within the spread of the ensembles. The UKMET also lies within the spread, though is stronger (likely owing to a more offshore track) and while it is not out of realm of possibilities, opted to lean closer to continuity and not include in today's blend. Elsewhere across the nation, there is above average consensus on reinforced troughing across the Eastern U.S. late in the period along with troughing moving into the Western U.S.. The blend for today from WPC leaned heavily on the ECMWF days 3-5, with smaller contributions from the 00z CMC and ensemble means. For 6-7, leaned more on the ensemble means to mitigate the less predictable detail differences at the longer range time scale. This maintains very good continuity with the previous WPC forecast.

...Weather Pattern/Hazard Highlights...

Upper trough energies will periodically work inland over an unsettled Northwestern U.S. and western Canada. A steady stream of ejecting impulses then progress downstream over southern Canada and the U.S. northern tier. This will force moderating fronts over the broad region and spawn some strong to severe thunderstorms. Convective rainfall potential may focus from the Northern Plains southeastward across the Midwest. Triple digits maximum temperatures (approaching/exceeding some heat records) are likely from the Desert Southwest/southern Great Basin to the south-central Plains, with heat indices making it feel closer to 115 in some places. Hot and humid weather also stretches into the Midwest and Eastern states as well. A heavy rain/weather threat is also expected to lift from the Southeast to coastal Mid-Atlantic and New England contingent on upper support/coastal low development. The best consensus at this time keeps the heaviest rainfall offshore, but this could shift closer to the coast dependent on surface low track/possible tropical development.

Santorelli/Schichtel

Additional 3-7 Day Hazards information can be found on the WPC medium range hazards chart at:
https://www.wpc.ncep.noaa.gov/threats/threats.php

WPC medium range 500mb heights, surface systems, weather grids, quantitative precipitation, winter weather outlook probabilities

and heat indices are at:

https://www.wpc.ncep.noaa.gov/medr/5dayfcst500_wbg.gif
https://www.wpc.ncep.noaa.gov/medr/5dayfcst_wbg_conus.gif
https://www.wpc.ncep.noaa.gov/5km_grids/5km_gridsbody.html
https://www.wpc.ncep.noaa.gov/qpf/day4-7.shtml
https://www.wpc.ncep.noaa.gov/wwd/pwpf_d47/pwpf_medr.php?day=4
https://www.wpc.ncep.noaa.gov/heat_index.shtml

4 Extended Forecast Discussion with Hazards Headlines Appended

Extended Forecast Discussion
NWS Weather Prediction Center College Park MD
414 PM EDT Mon Jul 06 2020

Valid 12Z Thu Jul 09 2020 - 12Z Mon Jul 13 2020

...Guidance/Predictability Assessment...

Smaller scale differences remain with respect to an Eastern Seaboard coastal low currently being monitored by NHC. The 06z GFS was noticeably faster/more progressive with the low, but the latest 12z run this morning looked better. WPC favors a blend of the ECMWF with the CMC which are closer and more within the spread of the ensembles. The UKMET also lies within the spread, though is stronger (likely owing to a more offshore track) and while it is not out of realm of possibilities, opted to lean closer to continuity and not include in todays blend. Elsewhere across the nation, there is above average consensus on reinforced troughing across the Eastern U.S. late in the period along with troughing moving into the Western U.S.. The blend for today from WPC leaned heavily on the ECMWF days 3-5, with smaller contributions from the 00z CMC and ensemble means. For 6-7, leaned more on the ensemble means to mitigate the less predictable detail differences at the longer range time scale. This maintains very good continuity with the previous WPC forecast.

...Weather Pattern/Hazard Highlights...

Upper trough energies will periodically work inland over an unsettled Northwestern U.S. and western Canada. A steady stream of ejecting impulses then progress downstream over southern Canada and the U.S. northern tier. This will force moderating fronts over the broad region and spawn some strong to severe thunderstorms. Convective rainfall potential may focus from the Northern Plains southeastward across the Midwest. Triple digits maximum temperatures (approaching/exceeding some heat records) are likely from the Desert Southwest/southern Great Basin to the south-central Plains, with heat indices making it feel closer to 115 in some places. Hot and humid weather also stretches into the Midwest and Eastern states as well. A heavy rain/weather threat is also expected to lift from the Southeast to coastal Mid-Atlantic and New England contingent on upper support/coastal low development. The best consensus at this time keeps the heaviest rainfall offshore, but this could shift closer to the coast dependent on surface low track/possible tropical development.

Santorelli/Schichtel

Hazards:
- Heavy rain possible from eastern Kansas to western Missouri, as well as near the North Carolina coast, Thu-Fri, Jul 9-Jul 10.
- Flooding possible across portions of the northern Plains.
- Flooding occurring or imminent over portions of central North Dakota.
- Excessive heat across portions of the southern Plains to the lower Mississippi Valley, Fri-Sun, Jul 10-Jul 12.
- Much above normal temperatures across portions of the southern High Plains, Sat-Mon, Jul 11-Jul 13.
- Much above normal temperatures across portions of northern New England and into the Great Lakes, Thu-Fri, Jul 9-Jul 10.

Additional 3-7 Day Hazards information can be found on the WPC medium range hazards chart at:
https://www.wpc.ncep.noaa.gov/threats/threats.php

WPC medium range 500mb heights, surface systems, weather grids, quantitative precipitation, winter weather outlook probabilities and heat indices are at:

https://www.wpc.ncep.noaa.gov/medr/5dayfcst500_wbg.gif
https://www.wpc.ncep.noaa.gov/medr/5dayfcst_wbg_conus.gif
https://www.wpc.ncep.noaa.gov/5km_grids/5km_gridsbody.html
https://www.wpc.ncep.noaa.gov/qpf/day4-7.shtml
https://www.wpc.ncep.noaa.gov/wwd/pwpf_d47/pwpf_medr.php?day=4
https://www.wpc.ncep.noaa.gov/heat_index.shtml

5 Alaska Extended Forecast Discussion

Alaska Extended Forecast Discussion
NWS Weather Prediction Center College Park MD
602 PM EDT Fri Jul 03 2020

Valid 12Z Tue Jul 07 2020 - 12Z Sat Jul 11 2020

...Overview and Guidance/Predictability Assessment...

Upper troughing initially over northeastern Russia and northwestern Canada Tuesday will focus toward western/southwestern Alaska by the end of next week. A system in the Gulf Tuesday will move southeastward toward the southern Panhandle and Haida Gwaii as a northern stream front pushes out of Southcentral. The 12Z GFS/ECMWF paired fairly well with their ensemble means (with partial support from the UKMET/Canadian) such that a blended solution served well through the period. Ensembles have wavered a bit on system timing especially out of the central North Pacific, but a blended solution should minimize further refinements. Increased ensemble weighting was used to balance the uncertainty by later next week, which should carry a system through the Gulf again toward the southern Panhandle and Hadai Gwaii.

...Weather/Hazard Highlights...

Increased troughing will promote cooler than average temperatures over most of the state next week, perhaps by 10-15 degrees in some spots. Extreme northwestern coastal areas may see near to above average temperatures with an offshore/downsloping flow off the Brooks Range. Showers will be favored over the Alaska Range amid daytime heating and cooling mid-level temperatures. Light showers are possible over the western Aleutians midweek as a dying warm front approaches from the south and a cold front approaches from the north. Showers may be enhanced over Southcentral later in the week as the upper trough from the northwest sinks toward the region. Rainfall is not expected to be heavy over a widespread area.

Fracasso

Additional 3-7 Day Hazard information can be found on the WPC medium range hazards chart at:
https://www.wpc.ncep.noaa.gov/threats/threats.php

Hazards: No significant hazards are expected over Alaska during this forecast period.

WPC medium range Alaskan products including 500mb, surface fronts/pressures progs and sensible weather grids can also be found at:

https://www.wpc.ncep.noaa.gov/alaska/ak_5dayfcst500_wbg.gif
https://www.wpc.ncep.noaa.gov/alaska/akmedr.shtml
https://www.wpc.ncep.noaa.gov/alaska/ak_5km_gridsbody.html

6 Hawaii Discussion

Hawaii Extended Forecast Discussion
NWS Weather Prediction Center College Park MD
344 AM EDT Mon Jun 29 2020

Valid 00Z Tue Jun 30 2020 - 00Z Tue Jul 07 2020

Trades of varying strength will continue through the period, supporting primary focus for showers over windward/mountain locations. However some localized sea breeze influence will be possible especially when trades are on the lighter side. Most rainfall during the period should be fairly light. There has been a signal for an area of higher precipitable water values to pass through the area within the Friday-Sunday period but latest guidance has diverged on this.

Expect trades to strengthen Tuesday-Wednesday after the departure of a surface trough/upper weakness, and then return to somewhat lighter speeds Thursday-Friday. During this cycle of trades an upper ridge will build in from the east/northeast and then reach just west/north of the main islands by around the end of the week. Trades should gradually strengthen once again during the weekend

and early next week as eastern Pacific high pressure expands. Most guidance keeps the area under a modest weakness aloft Saturday-Monday. As for the area of moisture that has been forecast to cross the state around Friday-Sunday, the 00Z ECMWF and to some degree the 12Z ECMWF mean maintain reasonable continuity but the GFS and GEFS mean have trended noticeably drier than yesterday. An intermediate solution appears best considering established continuity and the 12Z ECMWF mean recommending somewhat less moisture than the new ECMWF run.

Rausch

7 Preliminary Caribbean Discussion

TROPICAL DISCUSSION - INTERNATIONAL DESKS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
820 AM EDT THU JUL 09 2020

PRELIMINARY DISCUSSION FOR PUERTO RICO AND THE USVI FROM JUL 09/12 UTC: ANOTHER MOSTLY FAIR WEATHER DAY IS EXPECTED TODAY AS A DRY AND DUSTY SAHARAN AIR LAYER LINGERS OVER THE NORTHEAST CARIBBEAN. THIS...HOWEVER...CHANGES ON FRIDAY AS A RETROGRESSING TUTT INDUCES A LOW-MID LEVEL PERTURBATION AS IT ENTERS THE NORTHEAST CARIBBEAN. UNDER INFLUENCE OF THIS PERTURBATION...THE PWAT CONTENT BRIEFLY INCREASES TO AROUND 1.5 INCHES EARLY ON FRIDAY MORNING...LEADING TO A ROUND OF MOSTLY LIGHT CONVECTION AS IT STREAMS ACROSS THE VIRGIN ISLES-EASTERN PUERTO RICO. THROUGH MID AFTERNOON ACTIVITY WILL GRADUALLY EBB FROM THE EAST...WITH FOCUS OF THE AFTERNOON CONVECTION SHIFTING TO NORTHWEST PUERTO RICO...WITH MOST ACTIVE EXPECTED BETWEEN BARCELONETA AND AGUADILLA TO THE NORTHWEST WHERE IT IS TO LIKELY RESULT IN LOCALLY MODERATE RAINFALL AMOUNTS.

THIS SETS THE STAGE FOR THE GRADUAL EROSION OF THE TRADE WINDS INVERSION DURING THE WEEKEND...WITH VIGOROUS TROPICAL WAVE ENTERING THE EASTERN CARIBBEAN ON SATURDAY AFTERNOON. THE GLOBAL MODELS THEN SHOW THIS PERTURBATION STREAMING ACROSS THE FORECAST AREA DURING THE MORNING HOURS ON SUNDAY. ALTHOUGH THE MODELS GENERALLY AGREE ON THE TIMING OF THIS WAVE...THEY DIVERGE ON ITS IMPACT OVER THE NORTHEAST CARIBBEAN ISLANDS. THE GFS AND ECMWF IN PARTICULAR...BOTH SHOW PWAT CONTENT SURGING TO AROUND TWO INCHES AS THE WAVES MAKES LANDFALL OVER THE VIRGIN ISLES-EASTERN PUERTO RICO. THE EUROPEAN MODEL THEN SHOWS ITS MOISTURE QUICKLY EBBING DURING THE DAY ON SUNDAY...WHILE THE GFS PREFERS A HIGHER MOISTURE CONTENT THROUGH THE DAY INTO THE EVENING HOURS. BUT AS THE MJO TRANSITIONS TO ITS CONVERGENT PHASE EARLY NEXT WEEK...THE GFS MIGHT BE TOO BULLISH WITH THE MOISTURE CONTENT. THUS A BLEND OF THESE MODELS MIGHT OFFER THE BETTER SOLUTION...WITH TRAILING MOISTURE LASTING THROUGH MIDDAY THEN RAPIDLY EBBING DURING THE AFTERNOON HOURS. OVER THE VIRGIN ISLES-EASTERN PUERTO RICO/SAN JUAN METRO THE MOST ACTIVE IS EXPECTED BETWEEN 06-15 UTC ON SUNDAY...WITH SECONDARY CONVECTION EXPECTED OVER NORTHWEST PUERTO RICO IN THE AFTERNOON. UNCERTAINTY...HOWEVER...REMAINS HIGH AND CONFIDENCE IN THE FORECAST IS LOW DURING THE MEDIUM RANGE PERIOD.

DAVISON...WPC (USA)

8 Basin-Wide Caribbean Discussion

TROPICAL DISCUSSION - INTERNATIONAL DESKS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
153 PM EDT THU JUL 09 2020

TROPICAL DISCUSSION FROM JULY 09/16 UTC: AT 15 UTC...TROPICAL STORM CRISTINA CENTERED AT 17.4N 110.2W. MINIMUM CENTRAL PRESSURE WAS 995 HPA AND MAXIMUM SUSTAINED WINDS 55KT WITH GUSTS TO 65KT. CRISTINA WAS MOVING TO THE WEST-NORTHWEST OR 300 DEGREES AT 11KT.

IN MEXICO...A DRYING TREND IS EXPECTED TO CONTINUE THROUGH THE CYCLE. CONVECTION WILL BE PRIMARILY ENHANCED ALONG THE SIERRA MADRE OCCIDENTAL AND IN SOUTHERN PORTIONS OF THE COUNTRY...STIMULATED BY TWO TROPICAL WAVES DURING THE WEEKEND. IN THE UPPER LEVELS...A TUTT IS RETROGRESSING FROM THE WESTERN GULF ON WEDNESDAY TO CENTER SOUTHWEST OF THE BAJA CALIFORNIA PENINSULA BY SATURDAY. THIS WILL GIVE IN TO A RIDGE...FORECAST TO CENTER OVER NORTHERN VERACRUZ BY SATURDAY EVENING. VENTILATION WILL BE THE MOST FAVORABLE IN THE SOUTHERN PERIPHERY OF THE RIDGE...TO SUSTAIN MODERATE AMOUNTS IN OAXACA/GULF OF TEHUANTEPEC REGION IN INTERACTION WITH THE TROPICAL WAVES. ON THURSDAY...LARGEST AMOUNTS ARE EXPECTED BETWEEN JALISCO/COLIMA AND SINALOA...WHERE DIURNAL CONVECTION WILL SUSTAIN 10-15MM/DAY AND MAXIMA OF 20-40MM. DIURNAL CONVECTION IN CENTRAL MEXICO AND IN THE NORTHERN SIERRA MADRE OCCIDENTAL WILL FAVOR 05-10MM/DAY AND MAXIMA OF 15-25MM. ON THURSDAY...EXPECTING 05-10MM/DAY AND ISOLATED MAXIMA OF 15-20MM IN THE EJE VOLCANICO CENTRAL AND MOST OF THE SIERRA MADRE OCCIDENTAL. LARGER ACCUMULATIONS ARE EXPECTED IN SOUTHEAST MEXICO...AS TWO TROPICAL WAVES ARRIVE FROM CENTRAL AMERICA. THESE WILL FAVOR 15-20MM/DAY AND MAXIMA OF 30-60MM IN THE GULF OF TEHUANTEPEC REGION...AND 10-15MM/DAY AND MAXIMA OF 20-40MM IN CHIAPAS AND VERACRUZ. IN THE YUCATAN PENINSULA EXPECTING MAXIMA OF 15M. ON SATURDAY...LARGEST AMOUNTS ARE EXPECTED IN WESTERN CHIAPAS/OAXACA WHERE EXPECTING 10-15MM/DAY AND MAXIMA OF 20-40MM. HOWEVER...ISOLATED LARGER ACCUMULATIONS ARE POSSIBLE IN COASTAL LOCATIONS. IN SOUTHWEST MEXICO/EJE VOLCANICO CENTRAL AND IN THE SIERRA MADRE OCCIDENTAL OF SONORA AND NORTHERN SINALOA EXPECTING IS0LATED ACCUMULATIONS OF 05-10MM/DAY WITH MAXIMA OF 15-25MM.

IN THE CARIBBEAN...A DRYING TREND CONTINUES UNDER THE INFLUENCE OF A DRY AIR MASS ARRIVING FROM THE ATLANTIC AND AN ACCELERATION OF THE TRADES. INITIALLY...A TROPICAL WAVE WILL SUSTAIN SCATTERED CONVECTION IN THE NORTHWEST CARIBBEAN TO FAVOR 05-10MM/DAY AND MAXIMA OF 15-25MM IN CUBA ON THURSDAY...05-10MM/DAY AND MAXIMA OF 15MM IN JAMAICA AND THE CAYMAN ISLANDS...AND 10-15MM/DAY AND MAXIMA OF 20-35MM IN THE SOUTHEAST BAHAMAS/TURKS AND CAICOS. BUT ACCUMULATIONS WILL DECREASE IN AREAS TO THE EAST OF CENTRAL CUBA ON FRIDAY. FRIDAY CONVECTION WILL PEAK IN WESTERN CUBA AND THE NORTHWEST BAHAMAS...WHERE A MOIST PLUME WILL INTERACT WITH VENTILATION IN THE SOUTHEASTERN PERIPHERY OF AN UPPER RIDGE. THIS WILL FAVOR 10-15MM/DAY AND MAXIMA OF 20-35MM. LATE ON FRIDAY...A TROPICAL WAVE ENTERS THE WINDWARD ISLANDS TO FAVOR 10-15MM/DAY AND MAXIMA OF 20-40MM IN TRINIDAD AND TOBAGO...BUT VERY LIGHT ACCUMULATIONS IN AREAS TO THE NORTH. HOWEVER...A MORE ROBUST

TROPICAL WAVE ENTERS THE ARC OF THE LESSER ANTILLES DURING THE DAY ON SATURDAY...TO SUSTAIN 05-10MM/DAY AND MAXIMA OF 15-30MM IN AREAS TO THE SOUTH OF GUADELOUPE AND IN EASTERN PUERTO RICO/VIRGIN ISLANDS. IN THE LEEWARD ISLANDS EXPECTING MAXIMA OF 15-20MM/DAY.

CONVECTION IN CENTRAL AMERICA WILL BE LARGELY MODULATED BY TROPICAL WAVES. DAY-TO-DAY VARIABILITY WILL BE PARTICULARLY ENHANCED IN NORTHERN CENTRAL AMERICA...AS A DRY AIR MASS TRAILS BEHIND THE TROPICAL WAVES CROSSING THE REGION ON THURSDAY AND FRIDAY. IN SOUTHERN CENTRAL AMERICA...CONVECTION WILL BE MORE ACTIVE THROUGH THE CYCLE AND PRODUCE LARGER ACCUMULATIONS...AS THE PANAMANIAN LOW PATTERN AND THE ITCZ WILL REMAIN QUITE ACTIVE IN INTERACTION WITH A TROPOSPHERIC KELVIN WAVE PROPAGATING ACROSS THE REGION. ON THURSDAY...LARGEST AMOUNTS ARE EXPECTED FROM WESTERN PANAMA INTO CENTRAL NICARAGUA AND EASTERN HONDURAS...WHERE TROPICAL WAVE CONVECTION WILL FAVOR 15-20MM/DAY AND MAXIMA OF 30-60MM. TO THE NORTHWEST ACROSS HONDURAS...EL SALVADOR AND SOUTHERN GUATEMALA EXPECTING 05-10MM/DAY AND MAXIMA OF 15-25MM. ON FRIDAY...LARGEST AMOUNTS ARE EXPECTED FROM NORTHWEST COLOMBIA INTO WESTERN COSTA RICA...WHERE SCATTERED CONVECTION WILL SUSTAIN 15-20MM/DAY AND MAXIMA OF 30-60MM. TROPICAL WAVE CONVECTION FROM CENTRAL HONDURAS WEST INTO CHIAPAS WILL SUSTAIN 10-15MM/DAY AND MAXIMA OF 20-40MM...WHILE IN THE YUCATAN PENINSULA EXPECTING MAXIMA OF 15MM. ON SATURDAY...AN ACTIVE PANAMANIAN LOW LATTERN WILL FACOR 15-20MM/DAY AND MAXIMA OF 30-60MM IN COSTA RICA/WESTERN PANAMA AND IN NORTHWEST COLOMBIA...WHILE IN EASTERN PANAMA EXPECTIN MAXIMA OF 20-40MM. A DRY AIR MASS WILL LIMIT ACCUMULATIONS TO MAXIMA OF 15MM IN NORTHERN CENTRAL AMERICA.

IN NORTHERN SOUTH AMERICA...TROPICAL WAVES AND THE NET WILL PLAY AN IMPORTANT ROLE IN MODULATONG CONVECTION. MOST ACTIVE CONVECTION IS EXPECTED IN CENTRAL VENEZUELA AND NORTH-CENTRAL COLOMBIA ON FRIDAY AND SATURDAY IN ASSOCIATION WITH THE NET...TROPICAL WAVES...AND ENHANCEMENT BY A TUTT EXTENDING ACROSS THE CENTRAL CARIBBEAN. SEE THE TROPICAL WAVE SECTION FOR ASSOCIATED ACCUMULATIONS.

TROPICAL/EASTERLY WAVES INITIALIZED ON JULY 09 AT 12 UTC:

TYPE	-	09/12	10/00	10/12	11/00	11/12	12/00	12/12	13/00	SOF
TW	-	42W	45W	49W	53W	57W	62W	67W	71W	15N
TW	-	47W	51W	55W	61W	65W	69W	73W	77W	10N
TI	-	56W	60W	64W	69W	73W	76W	79W	82W	23N
TW	-	77W	81W	85W	88W	91W	94W	97W	100W	21N
TW	-	82W	86W	90W	93W	96W	99W	102W	105W	22N
TI	-	94W	DISS	---	---	---	---	---	---	20N

A TROPICAL WAVE IS INITIALIZED AT 42W AND TO THE SOUTH F 15W. THIS WAVE IS FORECAST TO AMPLIFY AS IT ENTERS TE CARIBBEAN BASIN...TO ENTER THE ARC OF THE LESSER ANTILLES DURING THE DAY ON SATURDAY. THE MOIST PLUME ASSOCIATED WITH THIS WAVE WILL SUSTAIN A NOTICEABLE INCREASE IN CONVECTION AS ENTERS THE LESSER ANTILLES ON SATURDAY...WHERE IT WILL SUSTAIN 05-10MM/DAY AND MAXIMA OF 15-30MM. IN THE LEEWARD ISLANDS THE WAVE WILL SUSTAIN 05-10MM/DAY AND MAXIMA OF 15-20MM...WHILE IN THE VIRGIN ISLANDS AND EASTERN PUERTO RICO EXPECTING 05-10MM/DAY AND MAXIMA OF 15-30MM ON SATURDAY.

A TROPICAL WAVE IS INITIALIZED AT 47W AND TO THE SOUTH OF 10N. THIS WAVE IS GENERALLY CONFINED TO THE ATLANTIC ITCZ. THE WAVE WILL ARRIVE INTO FRENCH GUIANA ON THURSDAY TO SUSTAIN MAXIMA OF 15MM. NORTH ACROSS SURINAME AND NORTHERN GUYANA EXPECTING MAXIMA OF 15-30MM IN ASSOCIATION WITH ITCZ CONVERGENCE. ON FRIDAY...THE WAVE WILL STIMULATE CONVECTION IN TRINIDAD AND TOBAGO AND IN NORTHEAST VENEZUELA TO FAVOR 10-15MM/DAY AND MAXIMA OF 20-40MM. IN GUYANA EXPECTING 05-10MM/DAY AND MAXIMA OF 15-25MM. IN THE LESSER ANTILLES...LIMITED MOISTURE WILL FAVOR MAXIMA UNDER 10MM/DAY. ON SATURDAY...THE WAVE WILL STIMULATE CONVECTION IN CENTRAL VENEZUELA WHERE IT WILL FAVOR 15-20MM/DAY AND MAXIMA OF 30-60MM. IN EASTERN COLOMBIA/SOUTHERN VENEZUELA EXPECTING 05-10MM/DAY AND MAXIMA OF 15-30MM.

A TUTT-INDUCED PERTURBATION IS INITIALIZED AT 56W...TO THE SOUTH OF 23N AND TO THE NORTH OF 10N. THIS PERTURBATION WILL PROPAGATE ACROSS THE NORTHEAST CARIBBEAN WITH LITTLE IMPACTS IN PRECIPITATION...AS A DRY AIR MASS IS IN PLACE. THE WAVE WILL ENTER THE LEEWARD ISLANDS LATE ON THURSDAY. ON FRIDAY IT WILL PROPAGATE ACROSS PUERTO RICO AND THE DOMINICAN REPUBLIC. ON SATURDAY IT WILL PROPAGATE ACROSS HAITI...JAMAICA...SOUTHEAST/CENTRAL CUBA AND THE SOUTHEAST BAHAMAS.

A ROBUST TROPICAL WAVE IS INITIALIZED AT 77W AND TO THE SOUTH OF 21N. THIS IS THE LARGEST TROPICAL WAVE IN THE REGION...AND IS ASSOCIATED WITH A SIGNIFICANT MOIST PLUME IN THE NORTHERN CARIBBEAN AND THE BAHAMAS. A DRY AIR MASS TRAILS BEHIND THE WAVE AXIS...WHICH WILL SUSTAIN A NOTICEABLE DRYING TREND AS IT CROSSES THE CARIBBEAN. ON THURSDAY...THE WAVE WILL STIMULATE CONVECTION IN COSTA RICA...EASTERN NICARAGUA AND WESTERN PANAMA...WHERE EXPECTING 15-20MM/DAY AND MAXIMA OF 30-60MM. IN THE CAYMAN ISLANDS IT WILL FAVOR MAXIMA OF 15MM...IN CUBA 05-10MM/DAY AND MAXIMA OF 15-25MM...WHILE IN THE SOUTHEAST BAHAMAS EXPECTING 10-15MM/DAY AND MAXIMA OF 20-35MM. ON FRIDAY...THE WAVE WILL STIMULATE CONVECTION IN NORTHERN CENTRAL AMERICA TO SUSTAIN 10-15MM/DAY AND MAXIMA OF 20-40MM FROM CENTRAL HONDURAS AND THE GULF OF FONSECA REGION WEST INTO GUATEMALA AND SOUTHERN BELIZE. IN THE UICATAN PENINSULA EXPECTING MAXIMA OF 15MM. IN CENTRAL AND WESTERN CUBA...TRAILING MOISTURE WILL SUSTAIN 10-15MM/DAY AND MAXIMA OF 20-35MM. SIMILAR ACCUMULATIONS ARE EXPECTED IN THE CENTRAL AND NORTHWEST BAHAMAS. ON SATURDAY...THE WAVE WILL FAVOR 10-15MM/DAY AND MAXIMA OF 20-40MM IN OAXACA AND WESTERN CHIAPAS...ALTHOUGH ISOLATED LARGER AMOUNTS ARE EXPECTED IN COASTAL LOCATIONS.

A MUCH WEAKER TROPICAL WAVE IS INITIALIZED AT 82W. ON THURSDAY...THE WAVE WILL FAVOR MAXIMA OF 30-60MM IN SOUTHWEST NICARAGUA...WHILE IN NORTHERN CENTRAL AMERICA IT FAVORS 05-10MM/DAY AND MAXIMA OF 15-25MM. ON FRIDAY...THE WAVE WILL ENHANCE CONVECTION IN THE GULF OF TEHUANTEPEC REGION/OAXACA...WHERE IT WILL FAVOR 15-20MM/DAY AND MAXIMA OF 30-60MM WITH THE RISK FOR MCS FORMATION. IN VERACRUZ AND CHIAPAS EXPECTING 10-15MM/DAY AND MAXIMA OF 20-40MM. ON SATURDAY...THE WAVE WILL FAVOR 05-10MM/DAY AND MAXIMA OF 15-25MM IN THE SIERRA MADRE DEL SUR OF GUERRERO AND MICHOACAN...AND IN THE EJE VOLCANICO TRANSVERSAL.

A PERTURBATION ORIGINALLY INDUCED BY A TUTT IS INITIALIZED AT 94W

BUT IT IS LOSING DEFINITION AS IT PROPAGATES ACROSS THE EASTERN PACIFIC.

GALVEZ/DAVISON...WPC (USA)

9 South America Forecast Discussion

SOUTH AMERICA FORECAST DISCUSSION - INTERNATIONAL DESKS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
1242 PM EDT THU JUN 04 2020

GFS DATA AT FTPPRD.NCEP.NOAA.GOV/PUB/DATA/NCCF/COM/GFS/PROD/

FORECAST DISCUSSION FROM JUNE 03/16UTC: A DEEPENING MID/UPPER LEVEL TROUGH IS TO RAPIDLY BECOME THE DOMINANT SYNOPTIC SCALE FEATURE OVER THE EASTERN PACIFIC LATER THIS EVENING...WITH AXIS TO SPAN BETWEEN 70W-106W AND TO THE SOUTH OF 25S BY DAYBREAK ON FRIDAY. UNDER THE INFLUENCE OF A RIDGE TO THE WEST...THE HIGHLY AMPLIFIED TROUGH IS TO PERSIST THROUGH THE WEEKEND TO EARLY NEXT WEEK. MEANWHILE...THE MID LEVEL TROUGH IS TO FOCUS SHORT WAVE PERTURBATIONS AND DEEP SUBTROPICAL MOISTURE ACROSS THE SOUTHERN REGIONS OF CHILE. AT LOW LEVELS THIS WILL SUSTAIN A BROAD TROUGH THAT IS TO EXTEND BETWEEN THE BELLINGSHAUSEN-WEDDELL SEAS TO THE THE SOUTHERN CONE OF SOUTH AMERICA...FAVORING A TIGHT PRESSURE GRADIENT AND STRONG BOUNDARY LAYER WINDS ACROSS SOUTHERN CHILE AND PATAGONIA IN ARGENTINA. IN THIS AREA THE WINDS ARE FORECAST TO PEAK AT 35-50KT DURING THE NEXT SEVERAL DAYS. THIS WILL ENHANCE LOW LEVEL MOISTURE TRANSPORT AND CONVERGENCE ON THE SOUTHERN REGIONS OF CHILE...WHILE ADIABATICALLY LIFTING ACROSS THE SOUTHERN ANDES. THE MOST ACTIVE CONVECTION WITH THIS FEATURE IS EXPECTED BETWEEN PUERTO MONTT AND ISLA DE CHILOE IN SOUTHERN CHILE...WITH MAXIMA OF 20-45MM/DAY EXPECTED OVER THE NEXT TWO DAYS AND 20-30MM/DAY DURING THE WEEKEND TO EARLY NEXT WEEK. DUE TO STRONG TOPOGRAPHICAL FORCING AND ABOVE NORMAL MOISTURE CONTENT...LOCALLY HIGHER AMOUNTS ARE HIGHLY LIKELY. FURTHERMORE...THE INFLOW OF COLD AIR ALOFT WOULD LIKELY FAVOR ISOLATED THUNDERSTORMS OVER SOUTHERN CHILE DURING THE DAY ON SUNDAY THROUGH MONDAY MORNING.

ALSO OVER THE EASTERN PACIFIC...A MID/UPPER LEVEL LOW ON THE NORTHERN STREAM MEANDERS OFF THE NORTH COAST OF CHILE. AS THE AFOREMENTIONED TROUGH AMPLIFIES...IT IS TO DISPLACE THE NORTHERN STREAM VORTEX EAST ACROSS THE ANDES OF CHILE TO THE NORTHWEST PROVINCES IN ARGENTINA LATER THIS EVENING/EARLY FRIDAY MORNING. UNDER FAVORABLE JET DYNAMICS...THE CLOSED LOW IS TO GRADUALLY INTENSIFY/DEEPEN AS IT THEN TRACK TO THE EAST-SOUTHEAST ACROSS NORTHERN ARGENTINA TO SOUTHERN BRASIL/URUGUAY LATER ON FRIDAY. AS A SHORT WAVE RIDGE BUILDS TO THE EAST...THE CLOSED LOW IS TO BRIEFLY STALL OVER URUGUAY/RIO GRANDE DO SUL THROUGH MIDAFTERNOON ON SUNDAY...THEN WEAKEN AS IT MEANDERS EAST INTO THE WESTERN ATLANTIC ON SUNDAY-MONDAY. AT 250 HPA...A POLAR JET MAXIMA...IN ADDITION TO FAVOR THE RAPID INTENSIFICATION OF THE MID LEVEL LOW ON FRIDAY...IT IS TO ALSO FAVOR AN UPPER DIVERGENT PATTERN ACROSS URUGUAY-CORRIENTES/MISIONES IN NORTHERN ARGENTINA TO SOUTHERN BRASIL-PARAGUAY...VENTING ORGANIZED/POTENTIALLY SEVERE CONVECTION. AT LOW LEVELS...THE MID LEVEL VORTEX WILL SUSTAIN CYCLOGENESIS ALONG A MEANDERING FRONT OVER CENTRAL SOUTH AMERICA...WITH CLOSED

LOW FORMING OVER CORRIENTES ARGENTINA/SOUTHEAST PARAGUAY EARLY IN
THE CYCLE. THE FRONTAL LOW IS THEN FORECAST TO DEEPEN AS IT
GRADUALLY OCCLUDES ACROSS URUGUAY TO ENTRE RIOS/CORRIENTES IN
ARGENTINA. THE DEEPENING LOW WILL THEN DRIVE THE FRONT NORTH
ACROSS SOUTHEASTERN BRASIL-MATO GROSSO TO CENTRAL BOLIVIA ON
SATURDAY-SUNDAY. OVER PARAGUAY-MISIONES IN ARGENTINA-SOUTHERN
BRASIL THIS WILL TRIGGER ORGANIZED/POTENTIALLY SEVERE CONVECTION
EARLY IN THE CYCLE...WITH MAXIMA OF 40-80MM. ON FRIDAY...AS THE
CONVECTION BUILDS EAST ACROSS PARANA/SANTA CATARINA IN BRASIL TO
SAO PAULO-MATO GROSSO DO SUL THE MAXIMA DECREASES TO
20-40MM...WHILE OVER URUGUAY-ENTRE RIOS IN ARGENTINA IT WILL SURGE
TO 30-60MM AS MOISTURE WRAPS AROUND THE OCCLUDING LOW IN SUPPORT
OF AN ECHO TRAINING PATTERN. ACROSS CENTRAL BOLIVIA...AS THE FRONT
SURGES ACROSS MID SECTIONS OF SOUTH AMERICA...IT WILL SUSTAIN
MODERATE TO HEAVY RAINFALL AMOUNTS DURING THE NEXT TWO DAYS...WITH
MAXIMA OF 20-40MM/DAY.

AT 200 HPA...A CLOSED HIGH OVER NORTHEAST BRASIL ANCHORS A RIDGE
OVER NORTHERN SOUTH AMERICA...WITH AXIS DOMINATING THE UPPER FLOW
TO THE NORTH OF 20S. CONSISTENT WITH PREVIOUS FORECASTS...THE HIGH
IS TO MEANDER TO THE WEST-SOUTHWEST DURING THE NEXT FEW
DAYS...REACHING ACRE IN WESTERN BRASIL/NORTHERN BOLIVIA LATER
DURING THE WEEKEND. AS THE RIDGE HOLDS TO THE NORTH...A
SUBTROPICAL JET IS TO BOUND THE SOUTHERN FRINGES OF THIS RIDGE
DURING THE NEXT COUPLE OF DAYS...MEANWHILE FAVORING A DIVERGENT
PATTERN ALOFT THAT IS TO VENT THE AFOREMENTIONED CONVECTION OVER
PARAGUAY-SOUTHERN BRASIL. THE RIDGE ALOFT IS TO ALSO VENT
CONVECTION ACROSS EQUATORIAL SOUTH AMERICA...WITH MOST INTENSE AS
TROPICAL WAVE STREAMING TO THE NORTH INTERACT WITH THE NEAR
EQUATORIAL TROUGH. ACROSS AMAZONAS IN BRASIL-SOUTHERN
COLOMBIA/NORTHERN PERU-EASTERN ECUADOR THIS IS TO FAVOR SEVERAL
DAYS OF SCATTERED DEEP CONVECTION WITH MAXIMA IN THIS AREA PEAKING
AROUND 30-60MM EARLY IN THE CYCLE. SCATTERED CONVECTION IS TO THEN
PERSIST THROUGH THE WEEKEND...WITH DAILY MAXIMA SETTLING AROUND
20-40MM/DAY. OTHER CONVECTION IS TO CLUSTER ACROSS AMAPA IN
BRASIL/NORTHERN PARA TO THE SOUTHERN GUIANAS...WITH MAXIMA OF
15-30MM EXPECTED OVER THE NEXT FEW DAYS.

DAVISON...WPC (USA)
GALVEZ...WPC (USA)

10 Coded Surface Frontal Positions (Low-Resolution)

CODED SURFACE FRONTAL POSITIONS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
943 AM EDT THU JUL 09 2020

VALID 070912Z
HIGHS 1016 2688 1009 3897 1014 38107 1017 48114 1017 4078 1013 37112 1014
63106 1026 5435 1018 7039
LOWS 1008 16121 1002 38102 1005 35115 1007 4595 1000 5298 1014 4564 1004
33106 1005 4096 1012 47119 1007 39109 1011 66108 1007 64142 1005 6693 1007
6271 996 6356 1008 3576 1000 58147
TROF 20121 16121 16121
TROF 1994 1794
TROF 2081 1882 1582 1482 1382

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TROF 26101 25101 23100 2197
OCFNT WK 5298 5297 5295 5194 5193
COLD WK 5193 5093 4993 4894 4794
STNRY WK 4794 4795 4595
STNRY WK 4572 4573 4575 4478 4480 4582 4583
WARM WK 5193 5091 4988 4886 4683 4583
COLD WK 4564 4465 4467 4469 4571 4572
TROF 4092 3893 3795 3797 3799 37101
TROF 37102 36102 35103 34105 33106
TROF 35115 36115 38116
TROF 48126 45127 41131
TROF 33106 32109 33111
TROF 36118 37120 39122 41124
TROF 47119 49119 51120
TROF 47119 46119 44121
STNRY WK 39109 39110 39112 40115 39116
COLD WK 5098 4899 47101 46103 45107
STNRY WK 64142 65145 67148 67153
COLD WK 66108 65109 64112 62116 61120 60122
STNRY WK 60122 60124 61128 63131 63138 64142
TROF 6693 6393 5894
TROF 6693 6894 7194
COLD WK 6253 6054 5856 5657 5561 5564 5568
STNRY WK 5568 5572 5477 5480 5484 5487 5693 5697
TROF 6271 6074 5979
TROF 41114 43116 45116
STNRY WK 40104 40105 41106 41108 39109
COLD WK 4595 4394 4295 4196 4198
STNRY WK 4198 4199 41101 40102 40104
TROF 35115 33114 32114 30114 28113
TROF 53101 52105 53110
TROF 67157 68164 70169
OCFNT WK 6357 6355 6253
WARM WK 4564 4462 4262 4060
WARM WK 6253 6151 6049 5947 5846
STNRY WK 3576 3477 3379 3380 3381 3383
TROF 4564 4763 4962
TROF 6357 6657 7259 7875
WARM WK 58138 55135 53132
COLD WK 58138 53144 51150
OCFNT WK 58147 59145 59143 59141 58139
STNRY WK 3570 3672 3674 3575 3576
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11 Coded Surface Frontal Positions (High-Resolution)

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CODED SURFACE FRONTAL POSITIONS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
943 AM EDT THU JUL 09 2020

VALID 070912Z
HIGHS 1016 2640878 1009 3820972 1014 3781067 1017 4781142 1017 3970784 1013
3671122 1014 6261060 1026 5390350 1018 7020391
LOWS 1008 1601210 1002 3751015 1005 3501146 1007 4530951 1000 5200979 1014
4490636 1004 3291060 1005 3980965 1012 4751188 1007 3951093 1011 6651076
1007
6451424 1005 6590934 1007 6160707 996 6320563 1008 3470761 1000 5781465
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TROF 1991208 1601210 1591210
TROF 1940936 1700937
TROF 2040814 1810815 1460816 1430816 1330816
TROF 2621010 2461009 2290995 2050971
OCFNT 5190980 5210966 5200949 5130936 5060930
COLD 5060930 5030928 4890929 4780936 4710942
STNRY 4710942 4650946 4520951
STNRY 4490720 4510730 4490754 4370784 4370804 4460823 4530828
WARM 5080930 5030910 4900884 4790855 4630835 4530828
COLD 4490636 4410647 4370669 4390688 4460710 4490720
TROF 4010921 3810935 3690952 3650973 3670990 3731007
TROF 3741015 3581023 3471034 3361052 3281061
TROF 3501146 3631154 3781158
TROF 4821256 4461267 4131312
TROF 3271062 3241087 3301109
TROF 3561183 3681201 3861221 4061237
TROF 4741187 4911190 5091202
TROF 4741188 4561192 4391205
STNRY 3941093 3921104 3921122 3971145 3951164
COLD 5020980 4840990 4701008 4601033 4521071
STNRY 6441423 6511446 6681483 6751532
COLD 6651076 6491091 6361121 6241155 6061197 6041216
STNRY 6041216 6041241 6141278 6271314 6311381 6431421
TROF 6580935 6250928 5830942
TROF 6590934 6840944 7110935
COLD 6190529 5980535 5770556 5640575 5540607 5500643 5530684
STNRY 5540684 5530721 5420768 5370805 5380841 5430873 5560929 5550973
TROF 6160709 5970740 5860788
TROF 4091139 4291157 4511165
STNRY 3971039 3991049 4081060 4071076 3941093
COLD 4520951 4340941 4160947 4110962 4130984
STNRY 4130984 4140991 4111007 4011024 3971039
TROF 3491146 3331139 3161141 3011140 2831135
TROF 5261013 5241054 5291101
TROF 6711573 6821637 6961690
OCFNT 6310567 6280550 6200529
WARM 4490636 4410625 4210617 4030602
WARM 6190527 6110509 6000488 5920473 5790459
STNRY 3470762 3360773 3280787 3250801 3270815 3260832
TROF 4490635 4670634 4880619
TROF 6340568 6630568 7170593 7770753
WARM 5781385 5541347 5251323
COLD 5781385 5341438 5101496
OCFNT 5781467 5861454 5891433 5861405 5781385
STNRY 3540703 3570723 3560738 3530752 3480761
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12 Coded Surface Frontal Positions Forecast

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CODED SURFACE FRONTAL POSITIONS FORECAST
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
519 PM EDT THU JUL 09 2020

SURFACE PROG VALID 202007100600Z
HIGHS 1016 4411101 1019 3881065 1017 2650888 1013 3501115 1016 3760829 1014
4901038
LOWS 1012 3931220 1008 4361164 1008 4461069 1012 4791185 1008 5321142 1008
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3511150 1008 4091133 1005 3651027 1007 3251063 1010 4280885 1015 4470566
1000
5460885
TROF 5871200 5661178 5391143
STNRY 5520760 5490804 5540844 5520871
COLD 5231409 4931412 4661429
WARM 5231406 5021386 4811363
TROF 2650995 2410990 2160973
WARM 3740754 3800739 3790716 3820698
STNRY 3740754 3740754 3620762 3420767 3270778 3180797 3190823
OCFNT 5450888 5480876 5450860 5400847
COLD 4270884 4060899 3910930 3860965 3880993 3971016
COLD 5400846 5090846 4710860 4510872
STNRY 4510872 4400879 4280884
STNRY 3981018 4071033 4171043 4341054 4451069
OCFNT 5321142 5211123 5051115
WARM 5061115 4911101 4631088
STNRY 4461069 4521080 4631088
COLD 5051116 4821117 4641132 4531147
STNRY 4531148 4461158 4361164
TROF 3921219 3691204 3531185
TROF 3501149 3101138 2621109 2321100
TROF 3661026 3700997 3660966
TROF 3651026 3501037 3381055 3251064
TROF 3231064 2971059 2691043 2431035
WARM 5400848 5400846 5300811 5010770 4900739 4810683 4770665
4730653
STNRY 4460567 4410591 4490618 4660637 4740654
WARM 4460566 4380550 4210535
TROF 4470568 4650585 4870588
TROF 5311023 5300960 5430903
TROF 4771184 4581192 4431217
TROF 5621251 5271236 4961254
TROF 4081134 3921136 3701152 3511150
TROF 4451068 4231076 4081094
COLD 4361165 4201180 4101205 4041232 3841265 3671299 3601319

SURFACE PROG VALID 202007101200Z
HIGHS 1020 3861064 1016 4361103 1016 3860804 1022 4531256 1017 4550976 1017
3511105 1018 2630893
LOWS 1012 3971219 1013 4791185 1011 4401133 1008 3431146 1008 3681011 1010
3241063 1011 4170890 1008 5381125 1010 4591065 1001 5470872
COLD 5341381 5101375 4871378 4651398 4501425
COLD 3971231
WARM 5341378 5151361 4981344 4811321
OCFNT 5450874 5480860 5430845
STNRY 3130797 3110811 3160835 3320857
COLD 3780753 3570753 3350765 3200780 3130797
WARM 3830753 3870747 3880736 3830719 3810702
STNRY 5480723 5550795 5550853
WARM 5430846 5370806 5130766 4990736 4860702 4820687
STNRY 4330583 4470602 4620631 4730662 4810686
COLD 5420845 5090836 4760847 4440870
STNRY 4440870 4370875 4180890
STNRY 3931005 3961016 4031026 4141033
WARM 4581065 4441050 4291041 4131033
WARM 5011101 4921090 4721080
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STNRY 4581065 4641074 4721080
OCFNT 5371124 5201106 5011099
COLD 4391133 4251148 4141177 4101209 4051225
COLD 4041226 3911246 3571277 3461302 3411321
TROF 4391132 4161126 3911134
TROF 3231063 2961058 2681044 2411036
TROF 3681011 3750992 3780962
TROF 3671012 3531025 3381051 3251063
TROF 3421146 3171141 2861125 2501098 2201090
TROF 3431146 3651158 3881159
TROF 3961219 3741208 3481184
TROF 4781185 4561195 4361219
TROF 5371125 5591147 5851157
TROF 5641244 5351230 5051237
TROF 5460872 5350907 5310955 5301012
COLD 4170891 3950908 3840943 3931002
TROF 2630995 2360989 2120972
COLD 5011101 4771107 4641117
STNRY 4641117 4551125 4411134
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APPENDIX B

Geographical Area Designator Map

Figure 4-11. Geographical Areas and Terrain Features.