Fire Weather
Point Forecast Matrices
User's Guide to Decoding the PFW

What are the Point Forecast Matrices?

The Point Forecast Matrices (PFW) is a table that displays the forecasted weather parameters in 3, 6 and 12 hour intervals out to 7 days in the future. Below is a sample PFW, along with a description of each parameter's code (*blue* colored numbers).

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(1)   FOUS54 KGSP 281955 AAA
      PFWGSP

(2)   Fire Weather Point Forecast Matrices
      National Weather Service Greenville-Spartanburg SC
      254 PM EST Fri Feb 28 2025

(3)   GAZ017-010900-
      Chattooga #1-Habersham GA-Elev 1500 FT
      34.64N  83.52W Elev. 1500 ft
      254 PM EST Fri Feb 28 2025

(4)   Date            Fri 02/28/25            Sat 03/01/25            Sun 03/02/25
      UTC 3hrly    09 12 15 18 21 00 03 06 09 12 15 18 21 00 03 06 09 12 15 18 21 00
      EST 3hrly    04 07 10 13 16 19 22 01 04 07 10 13 16 19 22 01 04 07 10 13 16 19

(5)   Max/Min               67          44          67          28          54
(6)   Temp            67 56 49 47 45 44 60 67 64 52 41 35 30 28 41 51 54 46
(7)   Dewpt           18 25 25 27 30 32 33 27 20 20 20 18 17 16 15 12 11 12
(8)   Min/Max RH            15          63          18          60          17
(9)   RH              15 29 38 47 54 63 37 22 18 29 42 50 58 60 34 21 17 25
(10)  Wind dir         W  W  W  W  W  W  W  W  W NW NW NW  N  N NE SW  W  W
(11)  Wind dir deg    27 27 29 28 28 28 29 29 29 30 32 33 34 35 05 23 26 28
(12)  Wind spd         9  4  3  4  4  4  9 13 14 13  6  4  3  2  2  3  4  3
(13)  Clouds          CL CL CL CL CL CL FW FW FW SC FW FW SC FW FW CL CL CL
(14)  Clouds(%)        1  2  3  1  2  1  8 14 22 50  6 19 30 16  9  3  2  3
(15)  Vsby            10 10  9  9  9  9  9  9  9  9
(16)  Obvis
(17)  ADI             78  5  5  6  6 13 57 86 90 23  6  4  3  5 16 49 76  4
(18)  LVORI            1  2  2  2  2  2  1  1  1  2  2  2  3  3  2  1  1  2
(19)  Stability        3  6  6  6  6  2  3  4  4  4  6  6  7  2  2  2  2  7
(20)  PoP 12hr            0           0           0           0           0
(21)  QPF 12hr            0           0           0           0           0
(22)  Fire Weather                          A  A  A
(23)  Chc Thndr (%)    0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
(24)  DSI                 2                       3                       3
(25)  Mix hgt              600     700    5200    5500    1900     900    4500    5200
(26)  T wind dir             W       W      NW      NW       N       N       N       W
(27)  T wind spd           11      13      20      26      13       6       5      11
(28)  Ceiling            None    None    None    None    None    None    None    None
(29)  Sta pres          28.20   28.14   28.15   28.17   28.28   28.36   28.43   28.37
```

Key to Decoding the PFW:

(1) **WMO Identification Code** The issuing office identifier and the issuance date/time in UTC.

(2) **Product Name** Issuing office information and issuance date/time in local time.

(3)   **Point Location** The location for which this PFW has been issued and the date/UTC time the forecast expires.

(4)   **DATE** The forecast date and time groups. Forecast times/dates listed, both in UTC and local time in 3 hour increments.

(5)   **MAX/MIN** Maximum and minimum temperatures. The afternoon issuances will be labeled MIN/MAX. Forecast of maximum and minimum temperatures in degrees F. This is forecast out 7 days. Will be an integer (31 or -5).

(6)   **TEMP** The temperature (degrees F) valid at the indicated hour. TEMP is forecast at 3hour intervals out to 60 hours, then at 6-hour intervals on to day 7.

(7)   **DEWPT** The dew point temperature (deg F) for the same time periods corresponding to TEMP.

(8)   **MIN/MAX RH** The maximum and minimum relative humidity in the 12 hour time periods in percentages ranging from 0-100%. This is forecast for 7 days.

(9)   **RH** The relative humidity for the same time period as its corresponding TEMP and DEWPT. It is available out to 60 hours.

(10)   **WIND DIR** The forecast wind direction (*from which the wind blows*) at the indicated hour, using the 8 compass points (N, NE, E, SE, S, SW, W, NW). Calm wind will be listed as zeroes (00) in place of a direction. Available in 3-hour intervals out to day 7.

(11)   **WIND DIR DEG** The forecast wind direction (*from which the wind blows*) at the indicated hour, using 2-digit degrees in multiples of ten. (i.e.….05 = 50 degrees; 13 = 130 degrees). Calm wind will be listed as zeroes (00) in place of a direction. Available in 3hour intervals out to 60 hours.

(12)   **WIND SPD** and **WIND GUST** The forecast wind speeds in miles per hour (mph) as the indicated hour. If calm winds are forecast, then zeroes (00) will be listed in place of a speed. Wind Speed is available in 3-hour intervals out to day 7. A WIND GUST row will appear whenever the forecasted wind gusts exceed the sustained wind speed (WIND SPD) by at least 10 mph.

(13)   **CLOUDS**. This is the sky coverage at the indicated hour. Clouds are available in 3-hour intervals out 60 hours. Clouds are divided into 5 categories:

PFW Cloud Code	Commonly Called	% Sky in Cloud Cover
CL	Clear or Sunny	0%-6%
FW	Few	7%-31%
SC	Scattered	32%-69%
B1	Mostly Cloudy	70%-75%
B2	Considerable Clouds	76%-94%
OV	Overcast	95%-100%

(14)   **CLOUDS (%)**, This is the sky coverage expressed in percentage of the sky covered during the indicated hour. Cloud percentage is available in 3-hour intervals out 60 hours.

(15)   **VSBY** The minimum surface visibility, and if restricted below 7 miles, the obstruction causing the restriction. The value reported is the minimum value for the zone

grouping,   in order to capture the lowest values. Visibility values of 7 to 10 miles are considered   unrestricted.

(16) **OBVIS** When the surface visibility falls below 7 miles, the obstruction causing the restriction will be listed.

OBVIS CODE	Definition
F	Fog
PF	Patchy Fog
F+	Dense Fog
H	Haze
BS	Blowing Snow
K	Smoke
BD	Blowing Dust
AF	Volcanic Ashfall

(17) **ADI** Atmospheric Dispersion Index. A measure of dispersions based on mixing height, stability, and wind. ADI is forecast at 3-hour intervals out to 60 hours.

ADI	Character of Dispersion
Greater than 100	Very Good: but may indirectly indicate hazardous conditions.
61-100	Good: typical case burning weather values are in this range.
41-60	Generally Good: climatological afternoon values in most inland forested areas of the US fall within this range.
21-40	Fair: stagnation may be indicated if accompanied by persistent low wind speeds.
13-20	Generally Poor: stagnation, if persistent, although better than average for a night value.
7-12	Poor: stagnant at day, but near or above average at night.
1-6	Very poor: very frequent at night; represents the majority of nights in many locations.

(18) **MAX LVORI** Low Visibility Occurrence Risk Index. A measure of the potential for thick fog based on, dispersion and relative humidity. LVORI is forecast at 3-hour intervals out to 60 hours.

LVORI	Accidents with Fog or Smoke Reported
1	Lowest proportion of accidents with smoke and/or fog reported
2	Physical or statistical reasons for not including in category 1

3	Higher proportion of accidents than category 1, by about 30% to 50%
4	Significantly higher than category 1, by a factor of 2.
5	Significantly higher than category 1, by a factor of 3 to 10.
6	Significantly higher than category 1, by a factor of 10 to 20.
7	Significantly higher than category 1, by a factor of 20 to 40.
8	Significantly higher than category 1, by a factor of 40 to 75.
9	Significantly higher than category 1, by a factor of 75 to 125.
10	Significantly higher than category 1, by a factor of 150.

(19) **STABILITY** Turner-Pasquil Stability Class. Stability as a function of mixing height, wind, and solar radiation. Essential for thick fog based on dispersion and relative humidity. STABILITY is forecast at 3-hour intervals out to 60 hours.

CLASS	Stability
A	Very Unstable.
B	Moderately Unstable.
C	Slightly Unstable.
D	Near Neutral.
E	Slightly Stable.
F	Moderately Stable.

(20) **POP 12HR** The probability of precipitation, and is defined as the likelihood (in percent) of a measurable precipitation event (*0.01 inch or more*) at the given point. The 12HR refers to the 12 hour valid time ending at indicated hour. Forecast out to day 7.

(21) **QPF 12HR** The total amount of liquid precipitation (*in inches*) expected during the 12 hour period ending at the indicated hour.

(22) **WEATHER** Optional line describing any watches (A), warnings (W), or advisories (Y) in effect for the current time.

(23) **Chc Thndr (%)** Percent chance of thunder occurrence at the given point.

(24) **PRECIPITATION** A 3 hour occurrence of rain, snow, and/or showers will be listed under the indicated hour. This gives an indication of the likelihood of the precipitation.

PFW Type Code	Common Descriptor	Probability of Precipitation
S	Slight Chance	20%
C	Chance	30%-50%
L	Likely	60%-70%
O	Occasional or Periods	80%-100%
D	None used	80%-100%

When showers and/or thunderstorms are forecast, the following categories may be used:

PFW Type Code	Common Descriptor	Probability of Precipitation
IS	Isolated	20% or less
SC	Scattered	30%-50%
NM	Numerous	60%-70%
EX	None used	80%-100%

(25) **DSI** Davis Stability Index. This is an index of afternoon stability based on the surface to 850 mb temperature lapse rate and categorized from 1 to 4. DSI is included at 24-hr intervals out to 60 hours.

DSI	SFC to 850 mb Lapse Rate	Stability
1	Less than 10	Stable
2	10-14	Conditionally Unstable
3	15-17	Unstable
4	Greater than 17	Absolutely Unstable

(26) **MIX HGT** Mixing Height. The height to which the atmosphere mixes vertically, in feet above ground level. MIX HGT is forecast at 3-hour intervals out to 60 hours.

(27) **T WIND DIR** Transport Wind Direction. The average direction of the wind from the surface to the mixing height using the 8 compass points (N, NE, E, SE, S, SW, W, NW). T WIND DIR is forecast at 3-hour intervals out to 60 hours.

(28) **T WIND SPD** Transport Wind Speed. The average speed of the wind from the surface to the mixing height, using 2-digit degrees in multiples of ten. (i.e.…05 = 50 degrees; 13 = 130 degrees). T WIND SPD is forecast at 3-hour intervals out to 60 hours.

(29) **PRESSURE** The station pressure in inches of mercury. PRESSURE is forecast at 3-hour intervals out to 60 hours.

> **Updates and Corrections:** The PFW will be updated and corrected when the on-duty forecast team believes the current forecast is not representative, or when format or content errors are detected. When the PFW is updated, all forecast parameters prior to the update time (to the nearest 3-hour period) are removed from the product. Occasionally, a forecast may need a correction. In these instances, the automated PFW product is replaced with the corrected version.