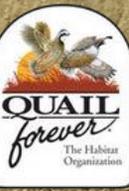


Fire Weather Planning Resources

Prescribed Fire in
Wisconsin



Fire Weather Planning Resources



Objectives

- Fire Weather Forecasts
 - National Weather Service
 - MesoWest
 - V-Smoke



National Weather Service

Wisconsin Forecast Offices:

- La Crosse
 - Southwest WI
- Green Bay
 - Northeast WI
- Milwaukee/Sullivan
 - Southeast and South Central WI

Fire Weather Planning Resources



National Weather Service

1. Enter a Zip Code and State at weather.gov

<https://www.weather.gov/>

The screenshot shows the National Weather Service website. At the top, there are logos for NOAA and the National Oceanic and Atmospheric Administration. The main header reads "NATIONAL WEATHER SERVICE" and "NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION". Below the header is a navigation menu with links for HOME, FORECAST, PAST WEATHER, WEATHER SAFETY, INFORMATION CENTER, NEWS, SEARCH, and ABOUT. The main content area features a "Local forecast by 'City, ST' or ZIP code" section with an input field and a "Go" button. To the right, there is a "Severe weather possible for parts of southern Plains" alert. Below the alert, there is a "Customize Your Weather.gov" sidebar with a "City, ST" input field, a "Remember Me" checkbox, and a "Get Weather" button. The main content area also includes a "Severe weather possible for parts of southern Plains" alert, a "Read More..." link, and a "Forecast Maps" section with a map of the United States showing weather patterns. The map is titled "Created: 10/27/14 at 22:44 UTC" and shows various weather conditions across the country. At the bottom of the map, there are links for "American Samoa", "Guam", and "Puerto Rico/Virgin Islands".

7-Day Forecast:

If you use weather.gov, you've seen this type of forecast before.

General forecast for area

Forecast area is within 5 miles of your map marker.

Lat: 41.45°N Lon: 97.33°W Elev: 1444ft

 **Overcast**
36°F
2°C

Humidity: 67%
Wind Speed: S 12 mph
Barometer: 30.14 in (1022.6 mb)
Dewpoint: 28°F (-3°C)
Visibility: 10.00 mi
Wind Chill: 28°F (-2°C)
Last update: 6 Jan 10:58 am CST

More Information:
[Local Forecast Office](#)
[More Local Wx](#)
[3 Day History](#)
[Mobile Weather](#)
[Hourly Weather Forecast](#)

Extended Forecast for **Linwood NE**

Today	Tonight	Tuesday	Tuesday Night	Wednesday	Wednesday Night	Thursday	Thursday Night	Friday
								
Chance Sprinkles	Mostly Clear	Mostly Sunny	Mostly Clear	Partly Sunny	Mostly Cloudy	Mostly Sunny	Mostly Cloudy	Mostly Cloudy then Slight Chance Snow
High: 42 °F	Low: 25 °F	High: 43 °F	Low: 22 °F	High: 42 °F	Low: 32 °F	High: 45 °F	Low: 21 °F	High: 30 °F

Detailed Forecast

Today	A chance of sprinkles between 1pm and 5pm. Cloudy, then gradually becoming mostly sunny, with a high near 42. South wind 7 to 9 mph becoming west northwest in the afternoon.
Tonight	Mostly clear, with a low around 25. West northwest wind 6 to 13 mph.
Tuesday	Mostly sunny, with a high near 43. West wind 6 to 11 mph becoming north in the afternoon.
Tuesday Night	Mostly clear, with a low around 22. North wind 5 to 7 mph becoming light and variable.
Wednesday	Partly sunny, with a high near 42. Southeast wind 8 to 17 mph, with gusts as high as 26 mph.
Wednesday Night	Mostly cloudy, with a low around 32.
Thursday	Mostly sunny, with a high near 45.
Thursday Night	Mostly cloudy, with a low around 21.
Friday	A slight chance of snow after noon. Mostly cloudy, with a high near 30.
Friday Night	A slight chance of snow before midnight. Partly cloudy, with a low around 13.
Saturday	Sunny, with a high near 31.
Saturday Night	Partly cloudy, with a low around 20.
Sunday	Partly sunny, with a high near 36.

Additional Forecasts and Information

[ZONE AREA FORECAST FOR BUTLER COUNTY, NE](#)

Forecast Discussion	Hourly Weather Forecast	Air Quality Forecasts
Printable Forecast	Tabular Forecast	International System of Units
Text Only Forecast	Hazardous Weather	NOAA Weather Radio
	Regional Weather Conditions Outlooks	Severe Weather Safety
		Local Climatology

Topographic
Click Map For Forecast



Disclaimer
Forecast Area

Point Forecast: Linwood NE
41.4°N 96.94°W (Elev. 1382 ft)

Last Update: 11:15 am CST Jan 6, 2020

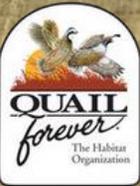
Forecast Valid: 11am CST Jan 6, 2020-8pm CST Jan 12, 2020

[Forecast Discussion](#)

[KML](#) [KML](#)

Additional Resources

Fire Weather Planning Resources



National Weather Service

1. Enter a Zip/State at weather.gov

2. Move the forecast area to your farm or ranch and click

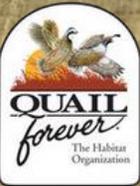
On this page you can change the 5-mile forecast area and find

additional information such as hourly forecasts

The screenshot shows the National Weather Service website interface. At the top, there are two buttons: "Likely" and "Rain". Below them is a "Detailed Forecast" section with a table of weather conditions for various times of the day and days of the week. To the right of the forecast is a "Basemap Options" section with a dropdown menu set to "Topographic" and a "Click map to change the forecast location" instruction. Below this is a map showing a topographic view of an area with a green square indicating the "Forecast Area". A red arrow points from the text "Forecast area" to this green square. At the bottom of the map, there are controls for zooming in and out, and a legend showing a green square for "Forecast Area", a "Disclaimer" link, and "Tiles ©ESRI". Below the map is an "ABOUT THIS FORECAST" section.

Time	Forecast
This Afternoon	Sunny, with a high near 45. West wind around 5 mph.
Tonight	Partly cloudy, with a low around 31. Southwest wind around 5 mph becoming south after midnight.
Wednesday	A slight chance of rain and snow before 11am, then rain likely. Mostly cloudy, with a high near 47. South wind 5 to 10 mph. Chance of precipitation is 60%. Little or no snow accumulation expected.
Wednesday Night	A chance of rain and snow before 1am, then a chance of rain and snow after 4am. Mostly cloudy, with a low around 34. East wind around 5 mph. Chance of precipitation is 30%.
Thursday	A chance of rain and snow before 10am, then a chance of rain. Mostly cloudy, with a high near 49. Northeast wind 5 to 10 mph. Chance of precipitation is 30%.
Thursday Night	Mostly cloudy, with a low around 33. North wind around 5 mph becoming calm after midnight.
Friday	Mostly sunny, with a high near 53. Calm wind becoming north around 5 mph in the afternoon.
Friday Night	Mostly clear, with a low around 32. Calm wind.
Saturday	Sunny, with a high near 62.
Saturday Night	Mostly cloudy, with a low around 42.
Sunday	A 20 percent chance of rain. Partly sunny, with a high near 67.
Sunday Night	Mostly cloudy, with a low around 52.
Monday	A 20 percent chance of rain. Partly sunny, with a high near 68.

Fire Weather Planning Resources



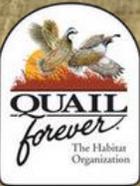
National Weather Service

1. Enter a Zip/State at weather.gov
2. Move the forecast area to your address and click
3. Locate the hourly weather link to the right of current conditions

The screenshot shows the National Weather Service website for Iowa County Airport (KMRJ). The current conditions are Fair, 39°F (4°C). A red arrow points to the "Hourly Weather" link in the "More Information" section. The extended forecast for Ridgeway WI is shown below.

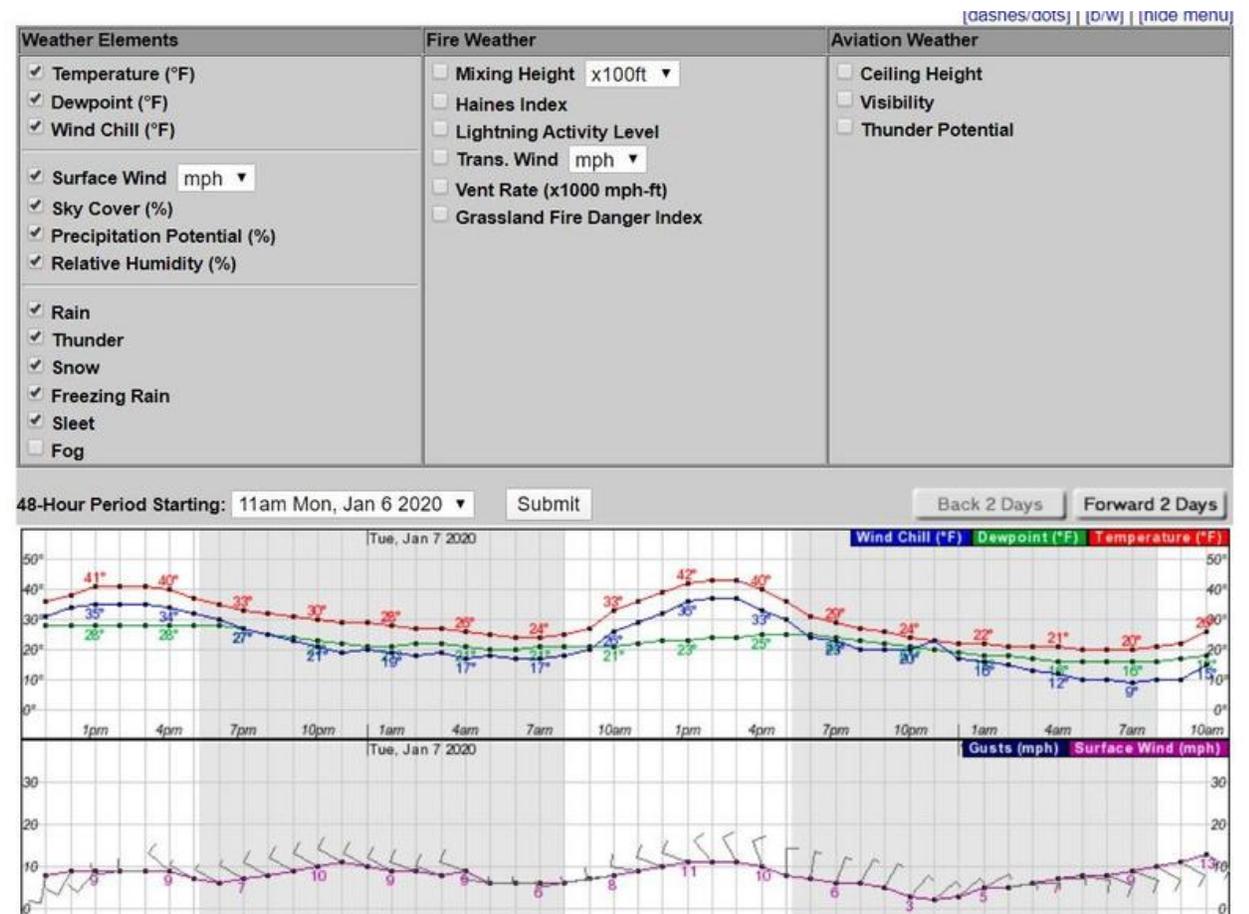
Time	Icon	High	Low
This Afternoon	Sunny	45 °F	
Tonight	Clear		31 °F
Wednesday	Snow	47 °F	
Wednesday Night	Snow		34 °F
Thursday	Snow	49 °F	
Thursday Night	Clear		33 °F
Friday	Sunny	53 °F	
Friday Night	Clear		32 °F
Saturday	Sunny	62 °F	

Fire Weather Planning Resources



National Weather Service

1. Enter a Zip/State at weather.gov
2. Move the forecast area to your address and click
3. Locate the hourly weather link to the right of current conditions
4. You've arrived, bookmark this page so you don't have to repeat the steps



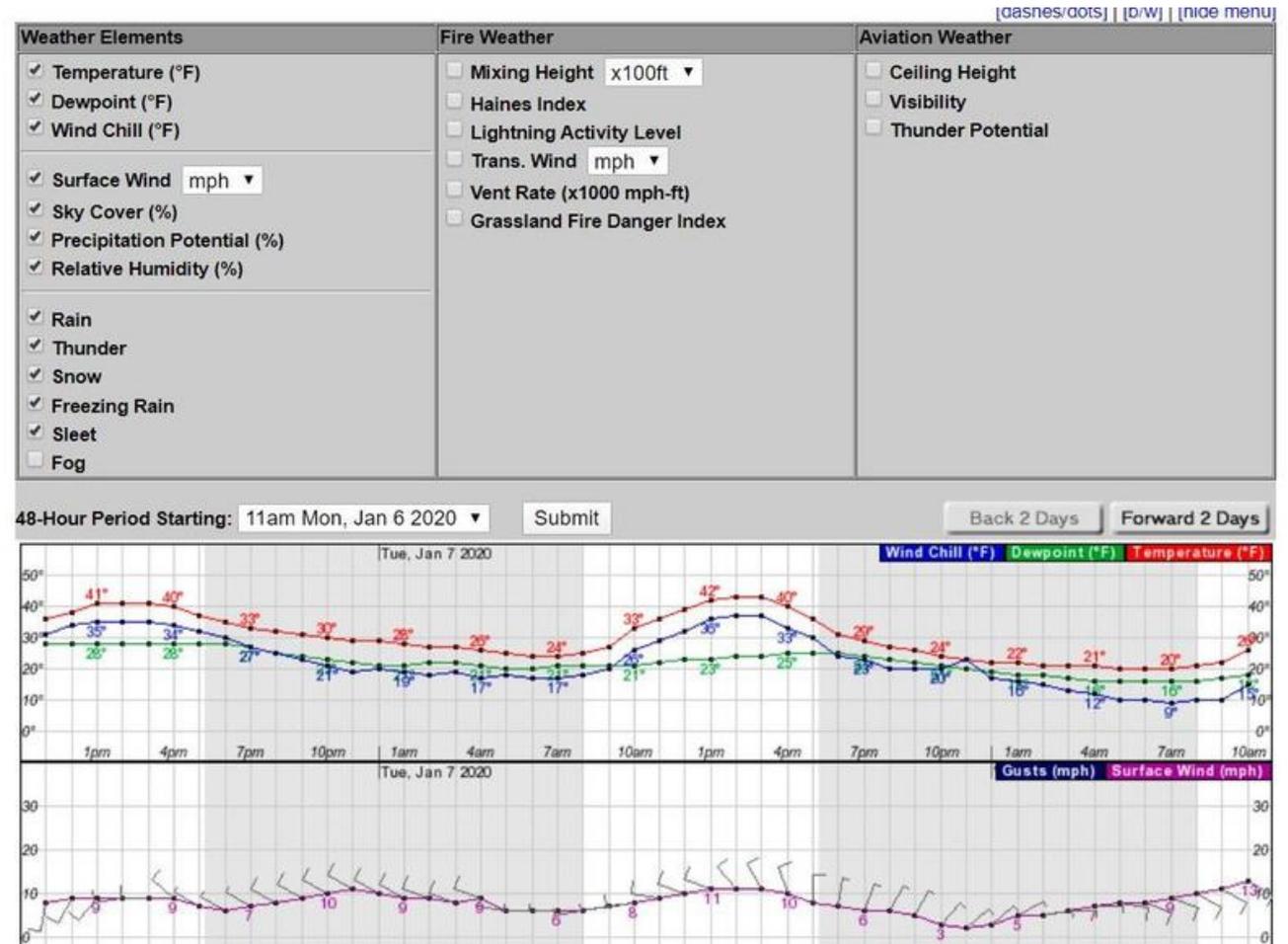
Fire Weather Planning Resources



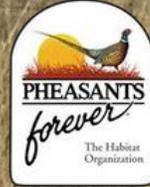
National Weather Service

5. Check boxes of information you need and hit submit

- Temp
- Surface Wind
- Sky Cover
- Relative Humidity
- Mixing Height
- Haines Index
- Trans Wind

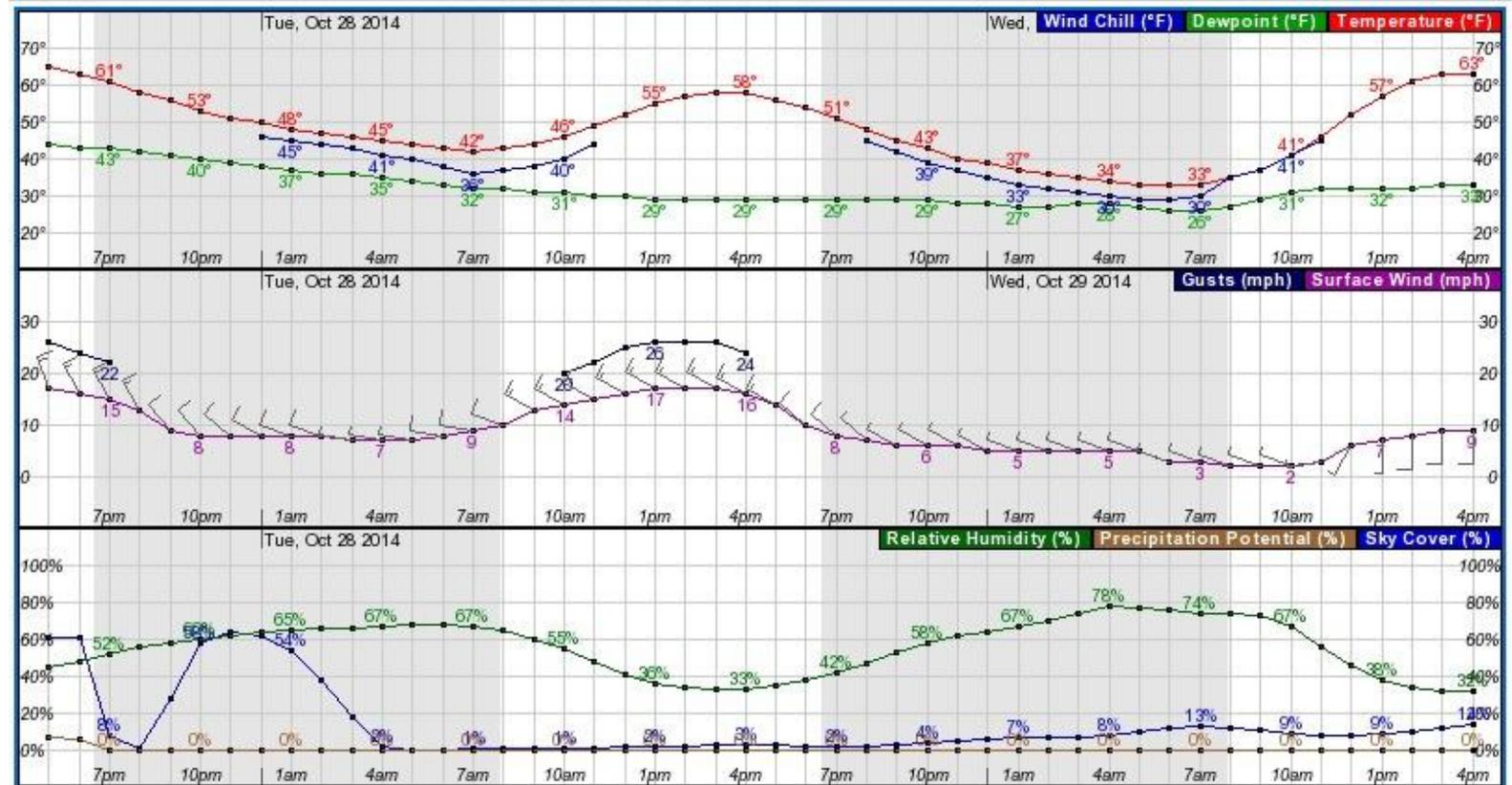


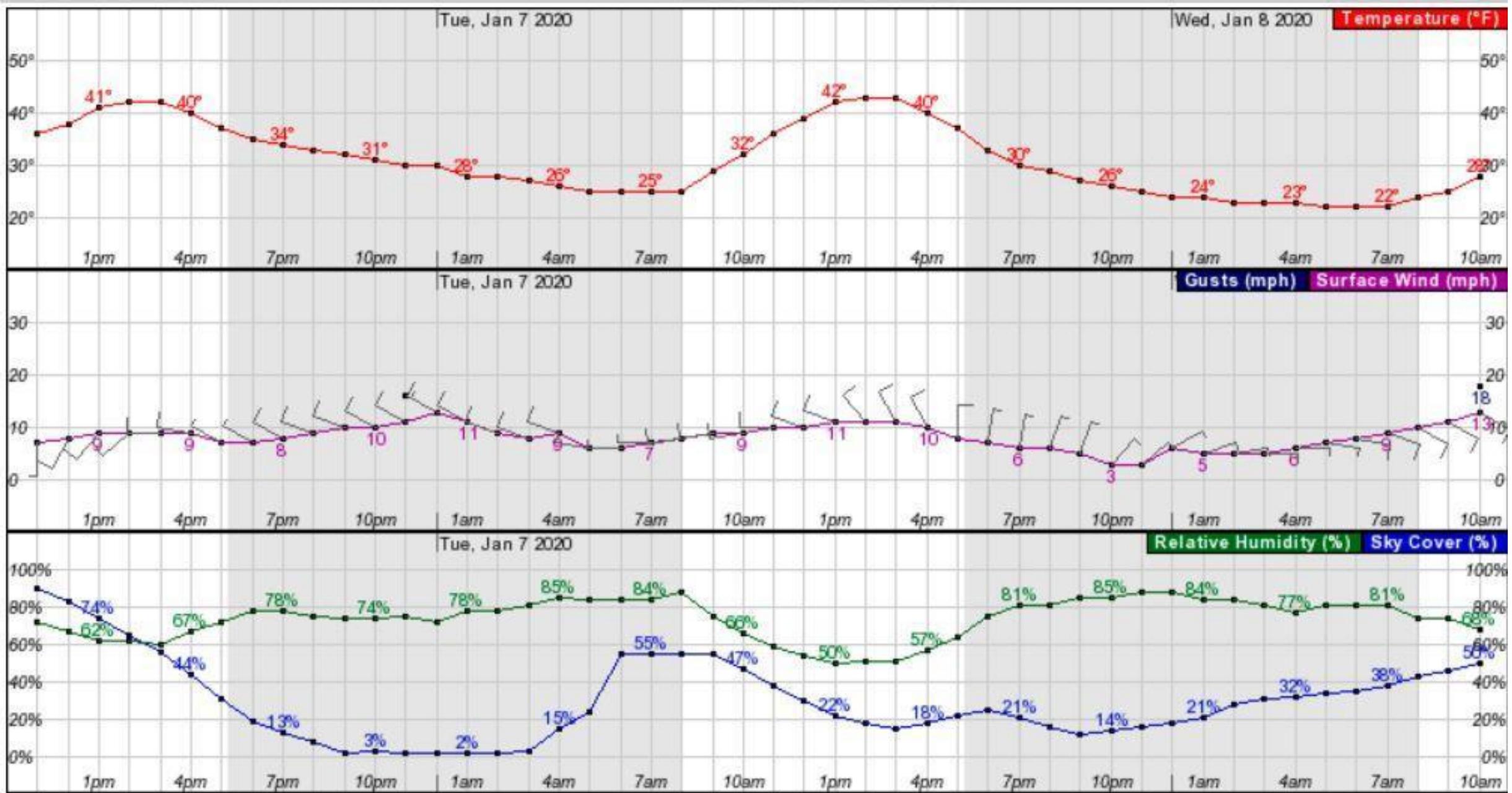
Fire Weather Planning Resources

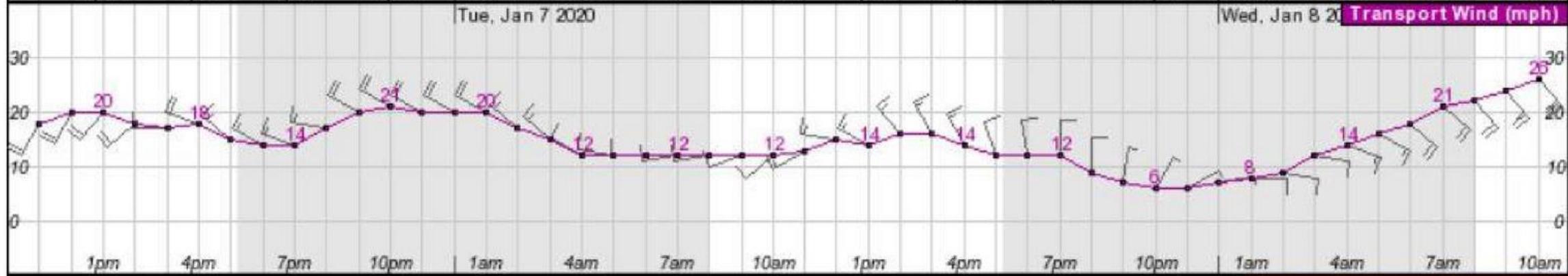
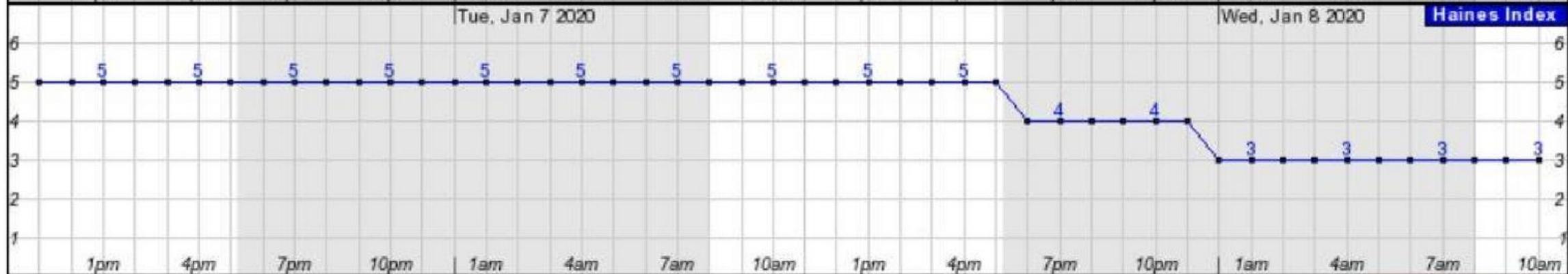
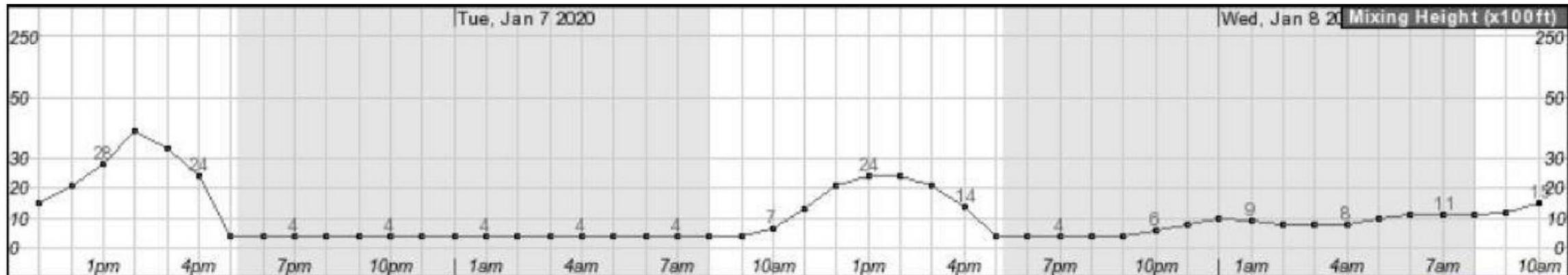


Hourly Graph:

Try this, if you are a visual learner. The hourly graph might alert you to changing weather conditions.







Fire Zone Forecast:

The Fire Weather Planning Forecast provides a general discussion and basic fire weather information.

Under Fire Weather Forecast some offices include a 6-10 day outlook for the region.

578
FNUS53 KOAX 271001
FWFOAX

FIRE WEATHER PLANNING FORECAST FOR EASTERN NEBRASKA/SOUTHWEST IOWA
NATIONAL WEATHER SERVICE OMAHA/VALLEY NE
501 AM CDT MON OCT 27 2014

.DISCUSSION...

A COLD FRONT MOVING THROUGH THE AREA THIS MORNING WILL BRING AN END TO THE WELL ABOVE NORMAL TEMPERATURES AND HUMIDITY VALUES. WINDS WILL INCREASE FROM THE NORTHWEST TODAY AS THE COOLER CANADIAN HIGH PRESSURE BUILDS INTO THE REGION. DRY WEATHER IS EXPECTED BEHIND THIS FRONT FOR A GOOD PART OF THE WORK WEEK...ALONG WITH DRY CONDITIONS.

NEZ066-272230-
LANCASTER-
INCLUDING THE CITIES OF...LINCOLN
501 AM CDT MON OCT 27 2014

	TODAY	TONIGHT	TUE
CLOUD COVER	PCLDY	MCLEAR	CLEAR
PRECIP TYPE	NONE	NONE	NONE
CHANCE PRECIP (%)	0	0	0
TEMP	69	40	59
RH %	45	74	28
20FT WND-AM (MPH)	NW 5-9 G22		W 9-13 G24
20FT WND-PM (MPH)	N 15-19 G28	NW 8-12 G24	NW 14-18 G27
PRECIP AMOUNT	0.00	0.00	0.00
MIXING HGT (FT-AGL)	3473		5654
TRANSPORT WND (MPH)	N 29		W 31
SMOKE DISPERSAL	EXCELLENT		EXCELLENT
LAL	1	1	1
HAINES INDEX	4 (LOW)	4 (LOW)	5 (MOD)

REMARKS...NONE.

Fire Weather Planning Resources



Mesowest

<https://glff.mesowest.org/>

- Fuel conditions data
 - Canadian Forest Fire Danger Rating System (CFFDRS)
 - Initial Spread Index
 - Expected rate of spread
 - Fine Fuel Moisture Code
 - Probability of ignition
 - Duff Moisture Code
 - Consumption of medium woody material
 - Drought Code
 - Consumption of large woody material

Fire Weather Planning Resources



- Click on the Tabular and Station Data button

Welcome to Great Lakes Fire & Fuels

Great Lakes Fire & Fuels is a meteorological hazard analysis resource for wildland fire managers in the Great Lakes states.

Map Display

Interactive station and gridded data

18	54	32	3	358	↑
17	56	28	3	320	↔
16	56	29	2	310	↔
15	54	31	3	0	↑

Tabular & Station Data

Weather and FWI obs and forecasts

Graphs

Visual ob/forecast exploration

Tools

Home Map Tables Graphs Tools Download

Welcome to Great Lakes Fire & Fuels, which has been developed by MesoWest at the University of Utah for the Great Lakes Fire and Fuels Compact.

Fire Weather Planning Resources



- Click on the Current CFFDRS Data button

MesoWest
Great Lakes Fire & Fuels

Apr 16 2025 09:25:53 CDT Log In/Sign Up

Tabular Data Displays

View GLFF data in a tabular presentation, including detailed exploration of forecast and observed CFFWI and NFDRS values for stations within the GLFF system.

FWI Daily Forecast Summary

Recent + forecast meteorology and FWI values for all (or a selection) of the GLFF stations.

Station Data

Daily and hourly observations from a single station. Both CFFWI and NFDRS outputs available for available stations.

- [Current CFFDRS Data](#)
- [Current NFDRS Data](#)

Station Metadata

Sortable list of station metadata for all active and inactive stations in the GLFF database.

Great Lakes Fire & Fuels
Developed by MesoWest 2003-2025

release main@193a6697

Home

Map

Tables

Graphs

Tools

Download

Fire Weather Planning Resources



- Click on the change station button

MESOWEST
Great Lakes Fire & Fuels

Apr 16 2025 09:26:02 CDT Log In/ Sign Up

Station WX and FWIs

KMSP Minneapolis, Minneapolis-St. Paul International Airport

Change Stn

Date	Jump	Latest	ATF	RHP	WSM	GUST	VPD	GSI	PREC 24h	FFMC	DMC	DC	ISI	BUI	FWI	DSR	CDSR	O/LT
2025-04-18	hrly		51.9	59	14.2		5	0.5	0.46	None	58							
2025-04-17	hrly		60	69	13.1		5	0.5	0.00	None	34							
2025-04-16	hrly		54.9	36	10.7		9	0.5	0.00	None	10							
2025-04-15	hrly		50	40	26.5	28.8	7	0.5	0.01	None	-.00							
2025-04-14	hrly		46.4	53	21.9	29.9	5	0.5	0.00	None	-.00							
2025-04-13	hrly		62.6	48	10.4		10	0.4	0.00	None	-.00							
2025-04-12	hrly		64.4	37	17.3	23	13	0.4	0.00	None	-.00							
2025-04-11	hrly		48.2	62	0	18.4	4	0.4	0.00	None	-.00							
2025-04-10	hrly		48.2	71	9.2		3	0.3	0.02	None	-.00							
2025-04-09	hrly		51.8	37	8.1		8	0.3	0.00	None	-.00							
2025-04-08	hrly		42.8	22	4.6	18.4	7	0.3	0.00	None	-.00							
2025-04-07	hrly		35.6	29	9.2	23	5	0.3	0.00	None	-.00							

Home Map Tables Graphs Tools Download

Fire Weather Planning Resources



- This Screen will popup zoom in to find your closest station.

MesoWest Great Lakes Fire & Fuels

Apr 16 2025 09:26:11 CDT Log In/ Sign Up

Station WX and FWIs

KMSP Minneapolis, Minneapolis-St. Paul Intern

Change Stn MODE CFFDRS NFDRSO MESOWESTO NO-PREC

Date	Jump	Latest	ATF	RHP	WSM
2025-04-18	hrly		51.9	59	14.2
2025-04-17	hrly		60	69	13.1
2025-04-16	hrly		54.9	36	10.7
2025-04-15	hrly		50	40	26.5
2025-04-14	hrly		46.4	53	21.9
2025-04-13	hrly		62.6	48	10.4
2025-04-12	hrly		64.4	37	17.3
2025-04-11	hrly		48.2	62	0
2025-04-10	hrly		48.2	71	9.2
2025-04-09	hrly		51.8	37	8.1
2025-04-08	hrly		42.8	22	4.6
2025-04-07	hrly		35.6	29	9.2

Change Station

Search/Filter By GLFF Name or ID CLEAR FILTER

NFDRS-capable only

Click a station on the map or list to use that station.

Leaflet | © MapTiler © OpenStreetMap contributors

	FWI	DSR	CDSR	O/LT
None	None	None	None	58
None	None	None	None	34
None	None	None	None	10
None	None	None	None	-.00
None	None	None	None	-.00
None	None	None	None	-.00
None	None	None	None	-.00
None	None	None	None	-.00
None	None	None	None	-.00
None	None	None	None	-.00
None	None	None	None	-.00
None	None	None	None	-.00
None	None	None	None	-.00
None	None	None	None	-.00
None	None	None	None	-.00

Home Map Tools Download

Fire Weather Planning Resources



- Dodgeville DLEW3 is the closest station for greater Mt. Horeb area that has CFFDRS data

The screenshot shows the MESOWEST Great Lakes Fire & Fuels web application. A 'Change Station' dialog box is open, displaying a map of the Madison, WI area with several station markers. A blue arrow points to the Dodgeville station marker. The dialog box includes a search/filter field, a 'VIEW AS LIST' button, and a 'CANCEL' button. The background shows a table of station data with columns for Date, ATF, RHP, WSM, FWI, DSR, CDSR, and O/LT.

Date	Jump	Latest	ATF	RHP	WSM	FWI	DSR	CDSR	O/LT
2025-04-18	hrly		51.9	59	14.2	None	None	None	58
2025-04-17	hrly		60	69	13.1	None	None	None	34
2025-04-16	hrly		54.9	36	10.7	None	None	None	10
2025-04-15	hrly		50	40	26.5	None	None	None	- :00
2025-04-14	hrly		46.4	53	21.9	None	None	None	- :00
2025-04-13	hrly		62.6	48	10.4	None	None	None	- :00
2025-04-12	hrly		64.4	37	17.3	None	None	None	- :00
2025-04-11	hrly		48.2	62	0	None	None	None	- :00
2025-04-10	hrly		48.2	71	9.2	None	None	None	- :00
2025-04-09	hrly		51.8	37	8.1	None	None	None	- :00
2025-04-08	hrly		42.8	22	4.6	None	None	None	- :00
2025-04-07	hrly		35.6	29	9.2	None	None	None	- :00

Fire Weather Planning Resources



- This is the final screen
- There are four columns that are important for fuels data
 - Fine Fuel Moisture Code (FFMC)
 - Scale: 0-101
 - Duff Moisture Code (DMC)
 - Technically open ended
 - Drought Code (DC)
 - Technically open ended
 - Initial Spread Index (ISI)
 - Technically open ended

MESOWEST
Great Lakes Fire & Fuels

Apr 16 2025 09:26:55 CDT Log In/ Sign Up

Station WX and FWIs

DLEW3 DODGEVILLE

Change Stn MODE CFFDRS NFDRS MESOWEST NO-PRECIP GRAPH

Date	Jump	ATF	RHP	WSM	GUST	VPD	GSI	PREC 24h	FFMC	DMC	DC	ISI	BUI	FWI	DSR	CDSR	Hwd	Cfr	Grs	SL	O/LT
2025-04-18	hrly	64.1	67	11		7	0.5	0.88	52.7	10.5	12.5	0.5	10.2	0.3	0	31.4	L	L	L	2	58
2025-04-17	hrly	59.6	59	16.8		7	0.5	0.00	87	22.7	44.7	10.9	22.6	15.9	3.7	31.4	V	V	V	6	34
2025-04-16	hrly	52.2	35	3.8		9	0.5	0.00	88.6	21.1	41	4.8	21	7.9	1	27.7	H	H	H	4	10
2025-04-15	hrly	52	42	11	22	8	0.5	0.01	88.3	19.2	38	8.2	19.1	11.7	2.1	26.7	V	V	V	5	+ :11
2025-04-14	hrly	57	45	11	24	9	0.4	0.00	88.3	17.5	35	8.2	17.4	11.2	2	24.6	V	V	V	5	+ :11
2025-04-13	hrly	60	46	7	23	10	0.4	0.00	88.3	15.5	31.5	5.9	15.4	8	1.1	22.6	H	H	H	4	+ :11
2025-04-12	hrly	59	37	9	17	11	0.4	0.00	88.3	13.3	27.7	7	13.2	8.5	1.2	21.5	H	H	H	5	+ :11
2025-04-11	hrly	50	45	5	9	7	0.3	0.00	86.3	10.8	24	3.8	10.7	4.2	0.4	20.3	M	M	M	4	+ :11
2025-04-10	hrly	47	65	5	13	4	0.3	0.00	85.7	9.3	21.2	3.5	9.3	3.6	0.3	19.9	M	M	M	4	+ :11
2025-04-09	hrly	50	48	7	18	6	0.3	0.00	87.8	8.5	18.7	5.5	8.4	5.4	0.5	19.6	H	H	H	4	+ :11
2025-04-08	hrly	42	24	6	11	7	0.4	0.00	88.1	7.1	15.9	5.3	7	4.8	0.4	19.1	H	H	H	4	+ :11
2025-04-07	hrly	35	48	10	20	4	0.4	0.00	84.8	5.9	13.9	4.6	5.9	3.8	0.3	18.7	H	H	H	4	+ :11

Home Map Tables Graphs Tools Download

Fire Weather Planning Resources



V-Smoke

- <https://weather.gfc.state.ga.us/GoogleVsmoke/vsmoke-Good2.html>
- Search for address or move map to location and click
- Input acreage
- How long burn will last
- Type of ignition
- Fuel type and load
- Wind direction
- Mixing height
- can zoom in and see how severely smoke will impact areas downwind

Explanation

1. Location
Lat:
Lon:
2. Fire Size
Acres:
Duration: h
Ignition Method:
3. Fuel Load
Fuel Type:
Tons/Acre:
4. Fuel Consumption
Fuel Moisture Scenario:
% consumed:
5. Emissions
PM 2.5 Emission Factor: lbs/ton
Particulate Emission: gram
Heat Release Rate: MW
6. Weather
Mixing Height: ft
Transport Wind: mph

Stability Class:
7. Update Map
8. Misc Options

About

VSmoke-Web is a web-based implementation of VSmoke (Lavdas, 1996) and is designed to assist with planning prescribed burns in the Southern United States. VSmoke is a simple gaussian smoke dispersion model that calculates isopleths of surface smoke concentration. Output from the model represents peak hourly concentrations of PM2.5 or visibility (under development). Contour values and their colors correspond to the PM 2.5 thresholds for the Air Quality Index (AQI) and reflect potential health impacts ranging from moderate to hazardous (Visit AirNow for more AQI info). Burn location can be set by clicking on the map or by entering the Latitude and Longitude. Note that the Latitude and Longitude should be entered in decimal degrees (30.38,-84.37) or degrees+decimal minutes (30 22.80, -84 22.20 - note the space between degree and minute values).

AQI

Levels of Health Concern	AQI Value	Hourly PM 2.5 Conc.	Meaning
Good	0 to 50	0 to 9	Air quality is considered satisfactory, and air pollution poses little or no risk.
Yellow	51 to 100	10 to 35	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for very sensitive individuals.

Questions?

