

# Appendix C – Information Used in Developing a Course of Action for the Pagami Creek Fire on August 26, 2011

## MINNESOTA FIRE WEATHER FORECAST NATIONAL WEATHER SERVICE DULUTH, MN

326 PM CDT FRI AUG 26 2011

**.DISCUSSION...**A COLD FRONT WILL FINISH MOVING ACROSS THE NORTHLAND VERY EARLY THIS EVENING AS IT EXITS NORTHWESTERN WISCONSIN. BEHIND THE FRONT IT WILL BE COOLER AND MUCH DRIER. ALSO..WINDS WILL BE VERY LIGHT UNDER HIGH PRESSURE. THE HIGH PRESSURE WILL REMAIN THROUGH MUCH OF THE WEEKEND...ALTHOUGH SOME WIDELY SCATTERED SHOWER ARE POSSIBLE SATURDAY NIGHT AND SUNDAY AS AN UPPER LEVEL DISTURBANCE MOVES THROUGH.

### **ST. LOUIS...SUPERIOR NF WEST**

#### **INCLUDING...AURORA...COOK...ELY**

.TONIGHT...

SKY/WEATHER.....MOSTLY CLEAR. PATCHY FOG AFTER 2400.

MIN TEMPERATURE.....45-50.

MAX HUMIDITY.....88-93 PERCENT.

20-FOOT WINDS.....NORTHWEST WINDS 7 TO 12 MPH DECREASING TO 3 TO 6 MPH.

PRECIPITATION.....NONE.

.SATURDAY...

SKY/WEATHER.....MOSTLY SUNNY.

MAX TEMPERATURE.....70-75.

MIN HUMIDITY.....40-45 PERCENT.

20-FOOT WINDS.....NORTHWEST WINDS 3 TO 8 MPH.

HAINES INDEX.....5 OR MODERATE.

HOURS OF SUN.....10 HOURS.

PRECIPITATION.....NONE.

MIXING HEIGHT.....AROUND 6300 FT AGL (AVE 12-6 PM).

TRANSPORT WINDS.....NORTHWEST AROUND 8 MPH (AVE 12-6 PM).

SMOKE DISPERSAL.....AROUND 50000 OR GOOD (AVE 12-6 PM).

.SATURDAY NIGHT...

SKY/WEATHER.....MOSTLY CLEAR.

MIN TEMPERATURE.....42-47.

MAX HUMIDITY.....95-100 PERCENT.

20-FOOT WINDS.....SOUTHWEST WINDS 3 TO 6 MPH.

PRECIPITATION.....NONE.

.SUNDAY...

SKY/WEATHER.....PARTLY SUNNY. A SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS UNTIL 1200...THEN A CHANCE OF SHOWERS AND THUNDERSTORMS. CHANCE OF PRECIPITATION 30 PERCENT.

MAX TEMPERATURE.....69-74.

MIN HUMIDITY.....48-53 PERCENT.

20-FOOT WINDS.....SOUTHWEST WINDS AROUND 5 MPH.

HAINES INDEX.....5 OR MODERATE.

HOURS OF SUN.....6 HOURS.

PRECIPITATION.....SCATTERED TRACE TO 0.05 INCH AMOUNTS.

MIXING HEIGHT.....AROUND 5200 FT AGL (AVE 12-6 PM).  
TRANSPORT WINDS.....SOUTHWEST AROUND 5 MPH (AVE 12-6 PM).  
SMOKE DISPERSAL.....AROUND 23000 OR FAIR (AVE 12-6 PM).

**EXTENDED FORECAST...**

.MONDAY...PARTLY SUNNY. A SLIGHT CHANCE OF RAIN SHOWERS. HIGHS 70 TO 75. NORTH WINDS 4 TO 9 MPH. CHANCE OF SHOWERS 20 PERCENT.  
.TUESDAY...PARTLY CLOUDY. A SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS. HIGHS 70 TO 75. SOUTH WINDS 5 TO 10 MPH. CHANCE OF PRECIPITATION 20 PERCENT.  
.WEDNESDAY...MOSTLY CLOUDY. A SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS. HIGHS 75 TO 80. SOUTH WINDS 6 TO 11 MPH. CHANCE OF PRECIPITATION 20 PERCENT.

**SPOT FORECAST FOR PAGAMI CREEK...USFS NATIONAL WEATHER SERVICE DULUTH MN  
502 PM CDT FRI AUG 26 2011**

FORECAST IS BASED ON REQUEST TIME OF 1640 CDT ON AUGUST 26. IF CONDITIONS BECOME UNREPRESENTATIVE...CONTACT THE NATIONAL WEATHER SERVICE.

.DISCUSSION...GUSTY NORTHWEST WINDS AND VERY LOW RELATIVE HUMIDITY WILL CONTINUE INTO EARLY EVENING. RELATIVE HUMIDITY LEVELS WILL REMAIN IN THE 25 PERCENT RANGE UNTIL AFTER 7PM.

FAIR WEATHER IS ANTICIPATED SATURDAY WITH RAIN CHANCES INCREASING SUNDAY INTO MONDAY. MORE RAIN IS LIKELY TUESDAY AFTERNOON OR EVENING.

.TONIGHT...

SKY/WEATHER.....MOSTLY CLEAR. PATCHY FOG AFTER MIDNIGHT.  
MIN TEMPERATURE.....46-51.  
MAX HUMIDITY.....85 PERCENT.  
WIND (20 FT).....NORTHWEST WINDS 8 TO 12 MPH BECOMING LIGHT.  
MIXING HEIGHT.....1050 FT AGL.  
TRANSPORT WINDS.....NORTHWEST 10 TO 15 MPH.  
SMOKE DISPERSAL.....EXCELLENT (76900) DECREASING TO POOR (2000) IN THE LATE EVENING AND OVERNIGHT.

TIME (CDT)	7 PM	9 PM	11 PM	1 AM	3 AM	5 AM
TEMP.....	76	61	56	53	51	50
RH.....	34	58	66	74	77	80
20 FT WIND DIR..	NW	NW	NW	NW	NW	NW
20 FT WIND SPD..	11	8	6	4	3	3
20 FT WIND GUST.	20	15	12	5		

.SATURDAY...

SKY/WEATHER.....MOSTLY SUNNY.  
MAX TEMPERATURE.....69-74.  
MIN HUMIDITY.....42 PERCENT.  
WIND (20 FT).....LIGHT WINDS BECOMING NORTHWEST 3 TO 7 MPH.  
MIXING HEIGHT.....300 FT AGL INCREASING TO 3500 FT AGL LATE IN THE MORNING...THEN INCREASING TO 6900 FT AGL EARLY IN THE AFTERNOON DECREASING TO 4800 FT AGL LATE IN THE AFTERNOON.  
TRANSPORT WINDS.....NORTHWEST 5 TO 10 MPH.  
SMOKE DISPERSAL.....GOOD (50100).

TIME (CDT)	7 AM	9 AM	11 AM	1 PM	3 PM	5 PM
TEMP.....	49	57	64	69	72	71
RH.....	85	69	56	45	42	46
20 FT WIND DIR..	NW	N	NW	W	NW	NW
20 FT WIND SPD..	2	3	5	6	6	5
20 FT WIND GUST.		6	8	8	7	

Canadian Fire Danger Rating Indices

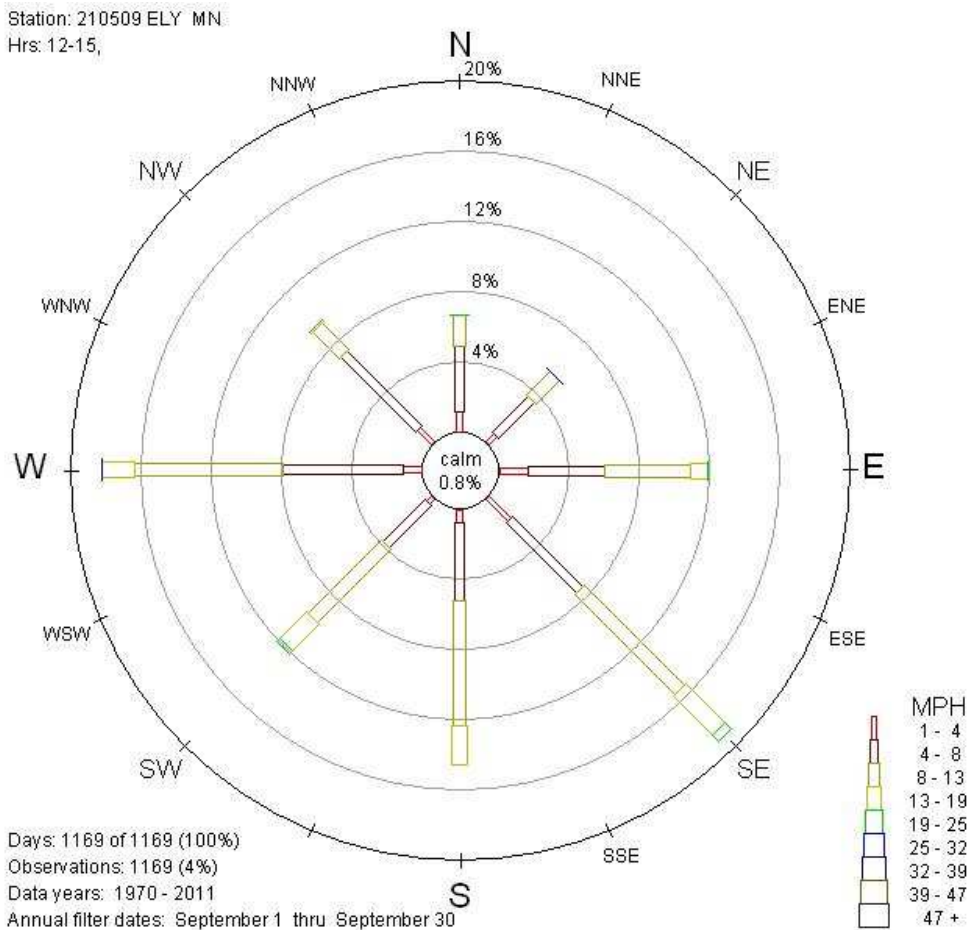
	Ely RAWS					
	FFMC	DMC	DC	ISI	BUI	FWI
August 26	88.1	35.8	288.9	8.6	54.6	20.9
August 27	88.5	38.4	295.7	6.1	57.9	16.8
August 28	90	41.6	302.9	7	61.9	19.2
August 29	90	44.4	310.6	9.6	65.4	24.8

The Long Term Analyst (LTAN) assigned to the IMT2 conducted a climatology analysis of likelihood of weather events which have been associated with large fire growth in northern Minnesota in September and October. The analysis indicated that, on average, 5 large growth potential days (winds > 10 MPH and RH < 35) occur from September 1 until the end of the fire season. These are usually associated with frontal passage. For this time of year, historic winds show most probable direction and highest speeds from the southeast to west (clockwise).

## Wind Analysis

An analysis of winds was conducted using historical weather data from the Ely RAWS to determine the most likely direction of fire spread.

Historical data analysis indicates that wind direction at the Ely RAWS during the burn period is typically from the southeast through northwest (clockwise). Note that RAWS stations have limitations when predicting winds at the localized level. The wind rose below was developed from 1200-1500 time periods for the month of September.



September Wind rose

Note: A **wind rose** is a graphic tool used by [meteorologists](#) to give a succinct view of how [wind](#) speed and direction are typically distributed at a particular location.