

Red Flag Event Summary – NWS Duluth

2015 April 2nd

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Synopsis:

The fire weather season took on an early start this year as winter snowfall was well below normal. As of April 1st, the Duluth Airport reported 48 inches of snow this season; this is 30 inches below normal. This is consistent with several other locations across the Northland reporting snowfall amounts on the order of 20 to 30 inches below normal. The Drought Monitor produced by the U.S. Department of Agriculture on March 31st depicted majority of Minnesota and the northern half of Wisconsin was in a Moderate Drought status. (Figure 1)

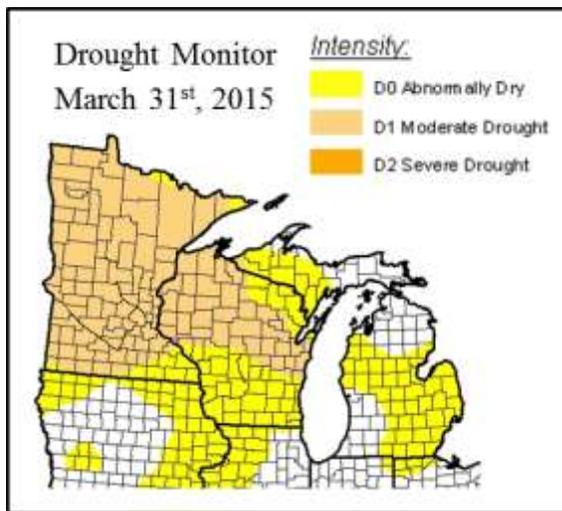


Figure 1

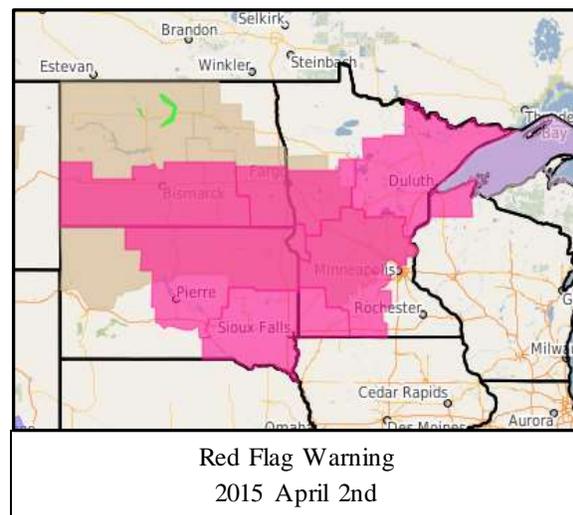


Figure 2

Weather:

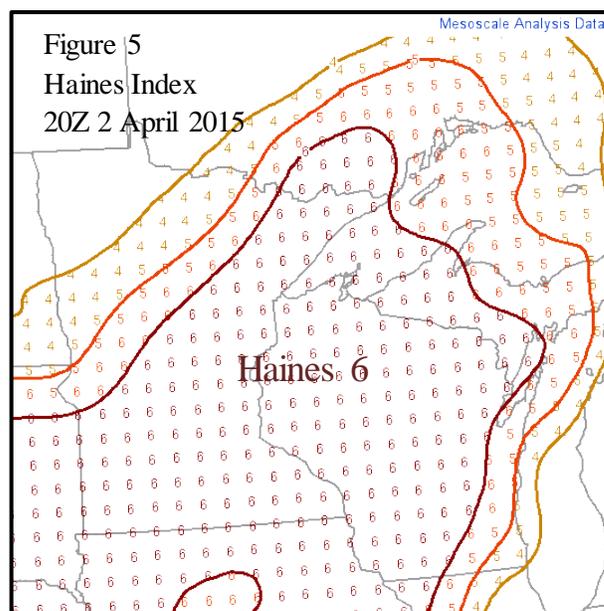
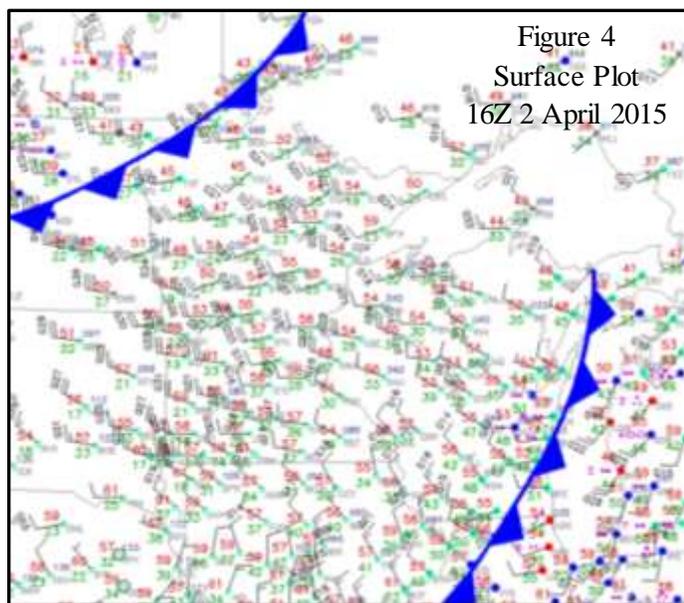
This Red Flag Warning, shown in figure 2, was issued in coordination of Minnesota and Wisconsin Land Mangers for low relative humidity and strong west winds. Minimum relative humidity values during the afternoon and early evening of April 2nd ranged from the mid-teens to the mid-20s. These critically low RH values were combined with widespread gusts of 35 to 40 mph, with peak winds in excess of 50 mph in many locations (Figure 3). Several Sheriff Offices reported having numerous trees and power lines blown down across their counties.

The strong winds were a result of a very dry and unstable air mass pushing over the region

Peak Wind Gusts. Thursday April 2 nd 2015			
2 SW BREEZY POINT	65 MPH	0247 PM 04/02	46.58N/94.24W
DULUTH AIRPORT	59 MPH	0335 PM 04/02	46.84N/92.21W
1 N KNIFE RIVER	57 MPH	0402 PM 04/02	46.97N/91.78W
2 SW PROCTOR	55 MPH	0210 PM 04/02	46.72N/92.25W
SKY HARBOR AIRPORT	53 MPH	0433 PM 04/02	46.72N/92.04W
TWO HARBORS	51 MPH	0313 PM 04/02	47.05N/91.75W
8 WNW MINONG	50 MPH	0403 PM 04/02	46.14N/91.98W
SUPERIOR AIRPORT	49 MPH	0435 PM 04/02	46.69N/92.09W
CLOQUET	48 MPH	0336 PM 04/02	46.70N/92.50W
3 W CLAM LAKE	47 MPH	0440 PM 04/02	46.17N/90.98W
BRAINERD AIRPORT	47 MPH	0258 PM 04/02	46.40N/94.13W
3 WNW TWIG	47 MPH	0341 PM 04/02	46.92N/92.41W
MOOSE LAKE AIRPORT	47 MPH	0352 PM 04/02	46.42N/92.81W
MOOSE LAKE RAWS	47 MPH	0308 PM 04/02	46.42N/92.80W
5 SE BREEZY POINT	46 MPH	0243 PM 04/02	46.55N/94.17W
2 SE BAYFIELD	46 MPH	0417 PM 04/02	46.78N/90.79W
1 SSE DULUTH	45 MPH	0121 PM 04/02	46.77N/92.11W
1 SW SAGINAW	45 MPH	0408 PM 04/02	46.84N/92.46W

Figure 3

between two fast moving cold fronts. The steep lapse rates allowed for very deep mixing of the lower atmosphere through the afternoon, bringing down the strong winds and dry air from aloft. A surface analysis around noon on April 2nd is seen in Figure 4. The dry and unstable air mass was also depicted in the Haines Index of 6, or extreme, analyzed across the region as shown in the SPC Mesoanalysis in Figure 5.



NWS Services:

- Critical Fire Weather conditions were highlighted in the Hazardous Weather Outlook and Fire Weather Planning Forecast starting on Tuesday March 31st.
- A Fire Weather Watch was issued at 400 am the morning of Wednesday April 1st, for Northeast Minnesota (including all MN Zones except Koochiching county).
- A Fire Weather Watch was issued at 10 pm the evening of Wednesday April 1st, for Bayfield and Douglas counties in NW Wisconsin.
- The watch was upgraded to a Red Flag Warning at 430 am Thursday morning, April 2nd.
- The Duluth NWS Weather Forecast Office provided a special weather briefing to the Minnesota Department of Natural Resources on the morning of April 2nd.
- A Fire Danger Monitoring Webpage was developed and linked in the Top News of the Day Section on the Duluth NWS Home Page.
- The Weather Story Graphic produced the morning of April 2nd highlighted the High Fire Danger.

Fire Reports:

- According to the Minnesota DNR, aircraft helped battle 11 fires Thursday. The Governor of Minnesota also requested the help of the MN National Guard Black Hawk helicopters. Across the state, the MN DNR responded to 88 fires, with over 100 grass fires in the central portion of the state that were handled by local fire departments.
- According to local media, the Wisconsin DNR responded to over 20 fires.

- **Tamarac Fire:** Burned 4320 acres about 5 miles NE McGregor, MN (Aitkin County). Fire was started by a spark from a power line and contained at 5pm Friday April 3rd. One structure, a hunting shack, was lost. No evacuations were needed.
- **Duluth:** According to local media, a grass fire, suspected to have started by a cigarette, burned near an apartment complex in the City of Duluth. The apartment building was evacuated for a brief period until the fire was contained.

Red Flag warning Verification:

April 2nd, 2015	
# of Warnings Issued:	16
# of Warning Verified:	13
POD:	72%
FAR:	0.19
Ave Lead Time:	8.5 hours

2015	Red Flag Watch		Red Flag Warning			Verification						Observations				
	Date(s)	Issued	Zones	Time Issued	Zones	Valid Time	Time	Lead Time	Site	RH	Temp	Wind	Max T	Min RH	Max SUS	Max Gust
April 2nd	4/1 0400	11		4/2 0430	11	1000-1900	1253	8:23	KORB	22%	55	17 G30	57	21	25	38
	4/1 0400	12		4/2 0430	12	1000-1900	1404	9:34	SEAM5	22%	58	16 G32	58	20	23	44
	4/1 0400	20		4/2 0430	20	1000-1900	1454	10:24	KBFW	16%	63	23 G38	63	15	23	38
	4/1 0400	21		4/2 0430	21	1000-1900	1513	10:43	KCKC	16%	55	24 G35	55	16	24	35
	4/1 0400	19		4/2 0430	19	1000-1900	1211	7:41	KELO	24%	55	22 G36	57	19	25	41
	4/1 0400	37		4/2 0430	37	1000-1900	1137	7:07	KCOQ	22%	55	22 G32	61	12	37	48
	4/1 0400	18		4/2 0430	18	1000-1900	1207		EFFM5	35%	52	16 G31	52	35	21	35
	4/1 0400	26		4/2 0430	26	1000-1900	1307	8:37	HCYM5	25%	57	14 G34	57	25	17	38
	4/1 0400	25		4/2 0430	25	1000-1900	1315		KXVG	28%	54	17G29	54	28	26	40
	4/1 0400	33		4/2 0430	33	1000-1900	1114		KPWC	35%	54	15 G25	54	35	21	35
	4/1 0400	34		4/2 0430	34	1000-1900	1206	7:36	BIRM5	23%	58	21 G33	59	21	27	43
	4/1 0400	35		4/2 0430	35	1000-1900	1300	8:30	KHZX	24%	57	22 G32	59	24	25	40
	4/1 0400	36		4/2 0430	36	1000-1900	1153	7:23	KAIT	17%	61	21 G31	61	15	25	44
	4/1 0400	38		4/2 0430	38	1000-1900	1234	8:04	K04W	22%	61	21 G38	61	22	31	39
		1		4/2 0431	1	1000-1900	1235	8:04	KOLG	23%	59	22 G31	61	16	26	49
		2		4/2 0432	2	1000-1900	1357	9:25	D6252	21%	61	15 G30	63	16	21	44
	3			3		1700	0:00	GDNW3	14%	60	18 G36	61	14	18	36	
	6			6		1406	0:00	LNDW3	17%	63	15 G30	63	16	16	35	
	7			7		1600	0:00	MRZW3	14%	61	23 G50	63	14	23	50	
	8			8		1703	0:00	HWDW3	15%	61	15 G32	64	15	15	35	
	9			9		1947	0:00	SMRW3	18%	60	16 G32	61	15	18	34	

Blue colored cells denote conditions that did not meet Red Flag Criteria with RFW in effect.

Yellow colored cells denote conditions within Red Flag Criteria with no RFW in effect.