Context-specific weather and climate indicators:
Helping to quantify observations from the land

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The issue:

Weather and Climate researchers imagine what is good for people and design weather information to match their expectations. However specific features of climate are often not captured and aspects of local climate change are not properly reflected.

So -
Why not use observations from the land to guide climate analyses

Once that link has been made, local observations can then be quantified and plotted with this new, more relevant understanding

> This can allow local observations to be more easily incorporated into documents that focus on climate change.

REINDEER HERDING, WEATHER AND ENVIRONMENTAL CHANGE ON THE SEWARD PENINSULA, ALASKA

By

Kumi L. Rattenbury, B.A.

Fairbanks, Alaska

December 2006

Seward Peninsula reindeer herding

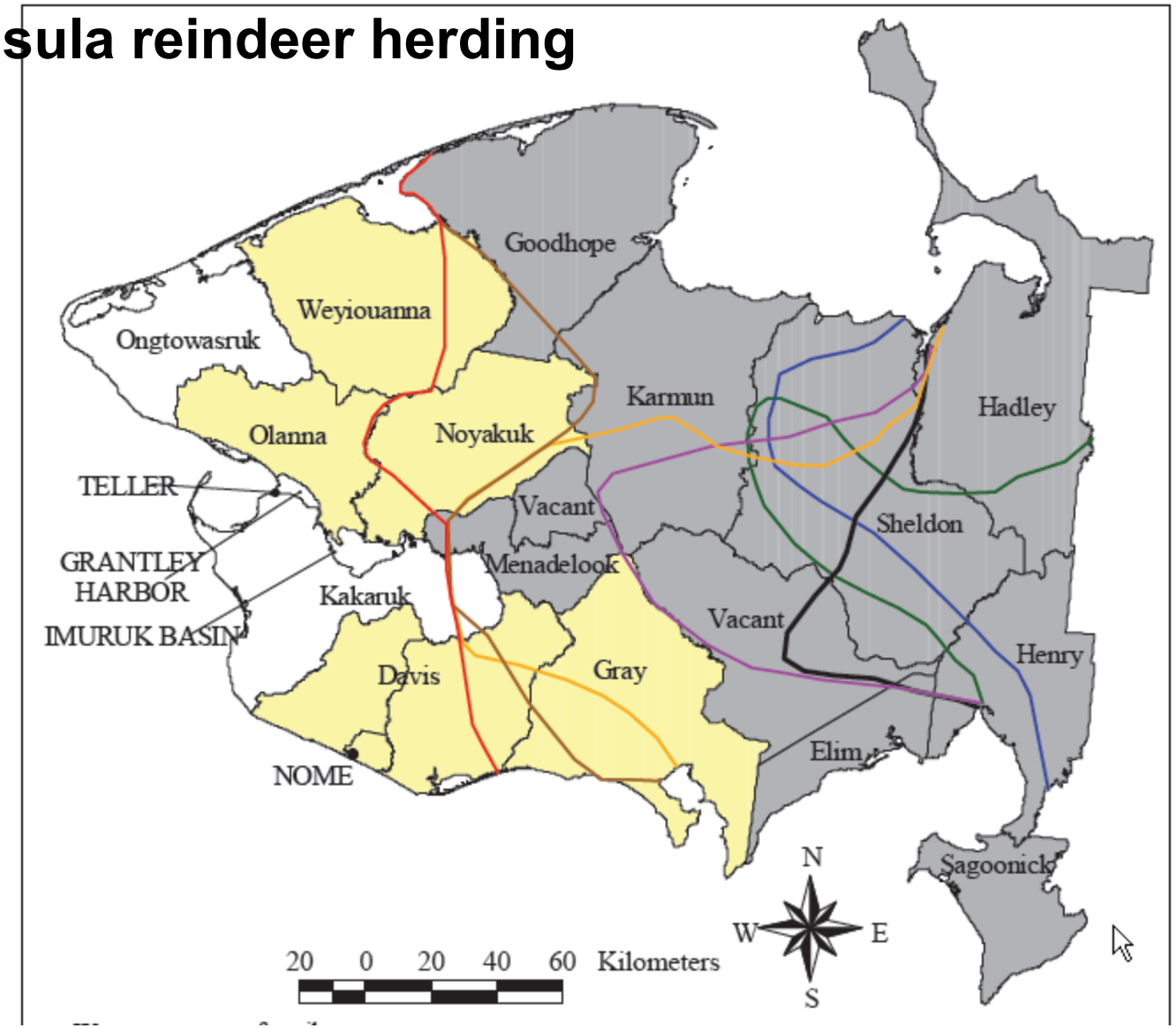


Figure 1. Reindeer ranges and caribou use of the Seward Peninsula, 1989-2000. The western front of observed caribou is shown for different years (colored lines) (Finstad et al. 2002, Oleson 2005). Reindeer ranges are shaded to show percent of herd loss to caribou by 2005.

Rattenbury, 2006

Seward Peninsula reindeer herding

Figure 2. James Noyakuk moves his herd by snowmachine.

Rattenbury, 2006

Decision making factors for travel

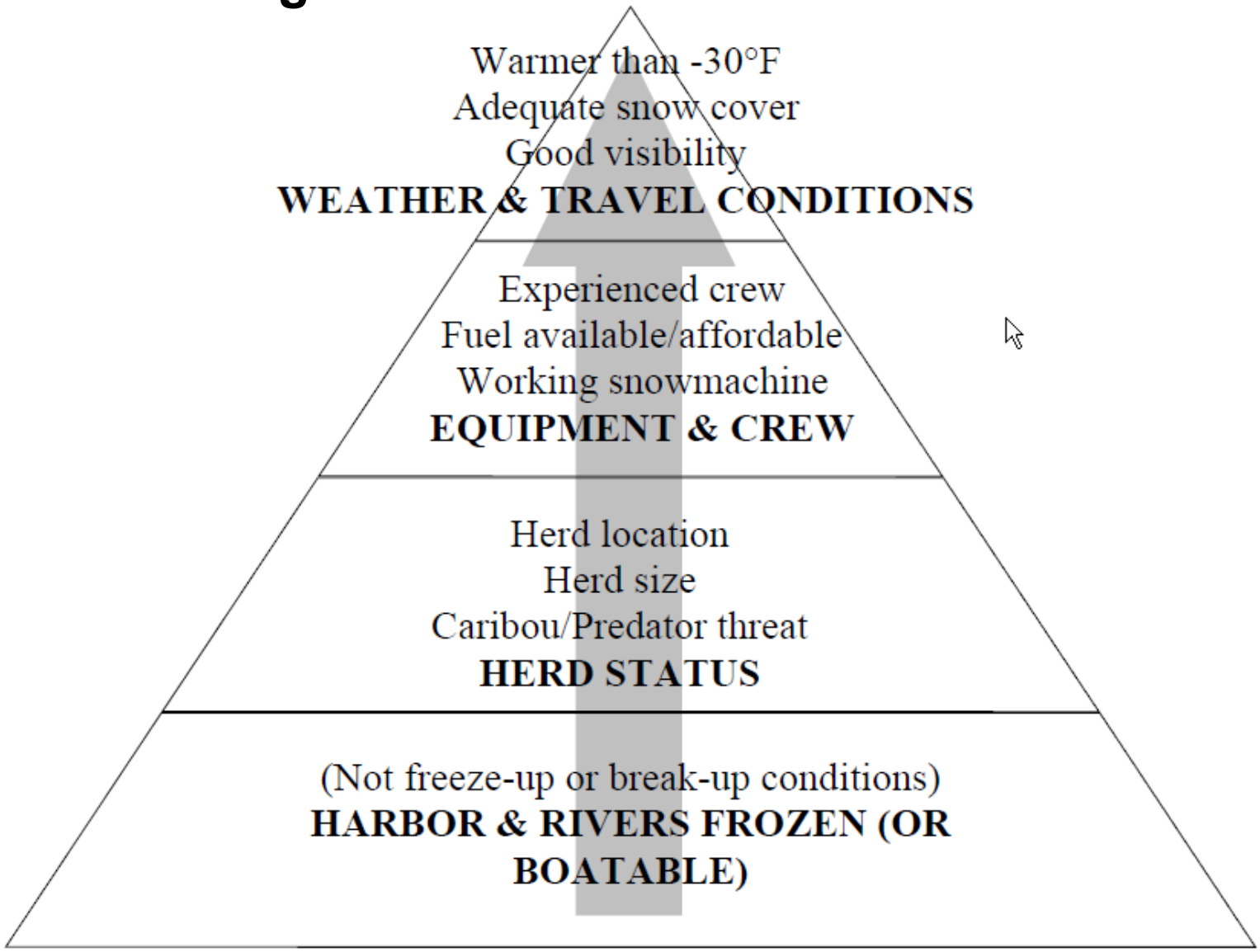


Figure 9. Noyakuk decision pyramid for daily herding activities. Factors at the bottom of the pyramid are considered before those in the upper tiers when deciding to travel to the herd.

Rattenbury, 2006

Decision making factors for travel - weather, trail conds.

Table 2. System for rating winter weather and trail conditions

Rating Category	Definition	Conditions contributing to the rating*
Good	Travel** possible at preferred speeds (e.g. 25 minutes for the 30 km route from Teller to the nearest range border at the Agiapuk River).	Solidly frozen harbor and river ice; Visibility >3 miles (5 km); >23cm packed and smooth snow cover
Minimal	Safe travel possible but slowed by weather or trail conditions (e.g. those listed as "poor" conditions)	Milder cases of conditions listed for the "poor" rating
Poor	Travel prevented by weather and/or trail conditions, or, if such conditions developed en route, travel slowed significantly and conditions considered unsafe.	Combination or severe cases of the following: Poor visibility (blowing snow, blizzard, fog); Open, overflow, or glare harbor or river ice; Low snow cover; Low windchill temperature (WCT)

* These conditions were described by Noyakuk during the interviews but are listed here so that the reader can make connections between the rating system and the reasons for ratings given by Noyakuk during the regular phone conversations about weekly herding trips.

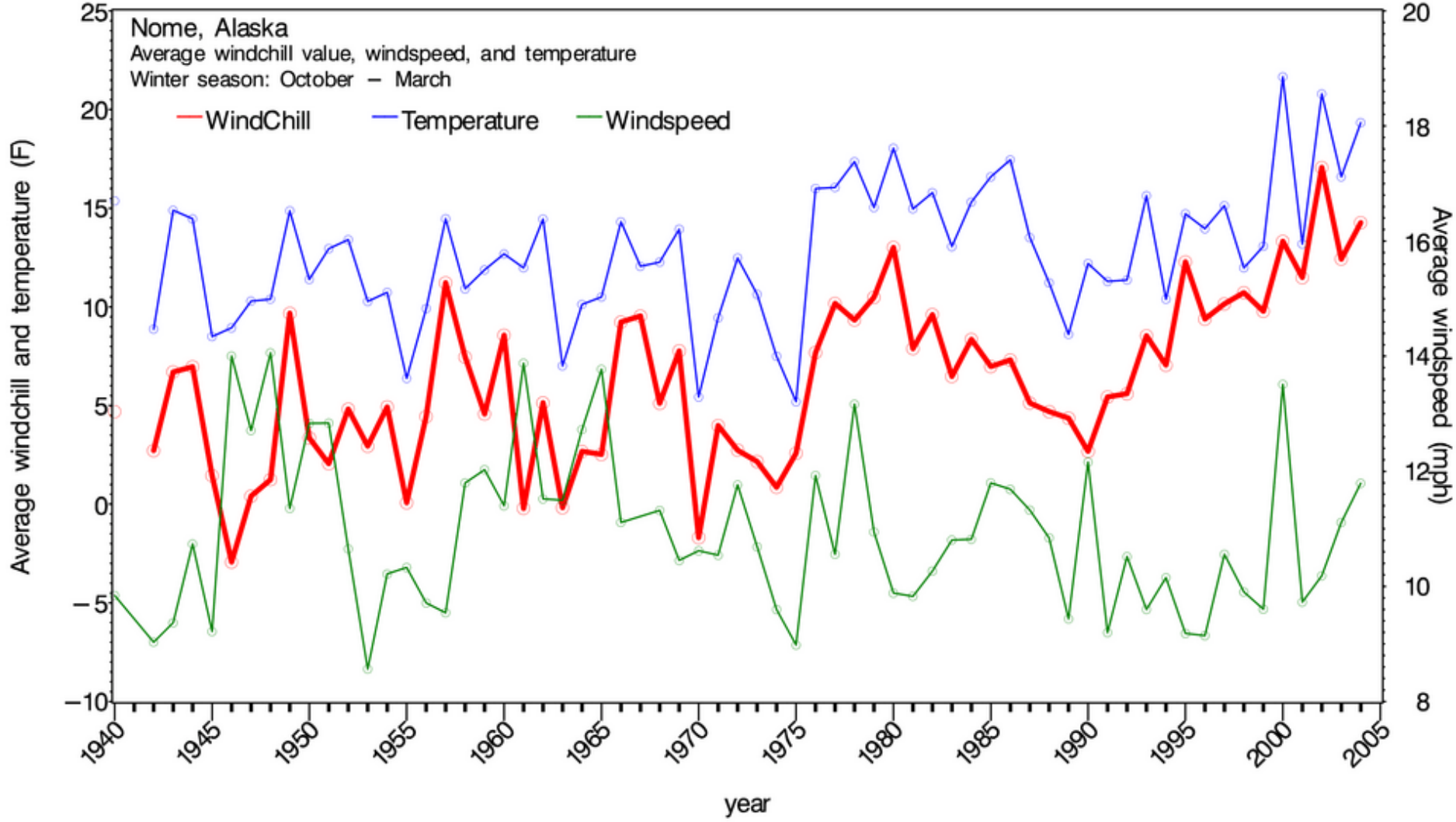
** Usually for herding purposes including driving reindeer, but including trips to the range for non-herding purposes

Rattenbury, 2006

Examine trends in some of these weather factors
> Nome

Nome

Mean seasonal wind chill
October - March, 1940 - 2005



Closer to home:
mid-Fall temperature impacts on moose movements
> Examine local temperature in a detailed, way,
See to what extent patterns match observations on the land

- if it doesn't fit, why not?
> further refine the weather control?
> other factors at work? (eg change in what they eat?)

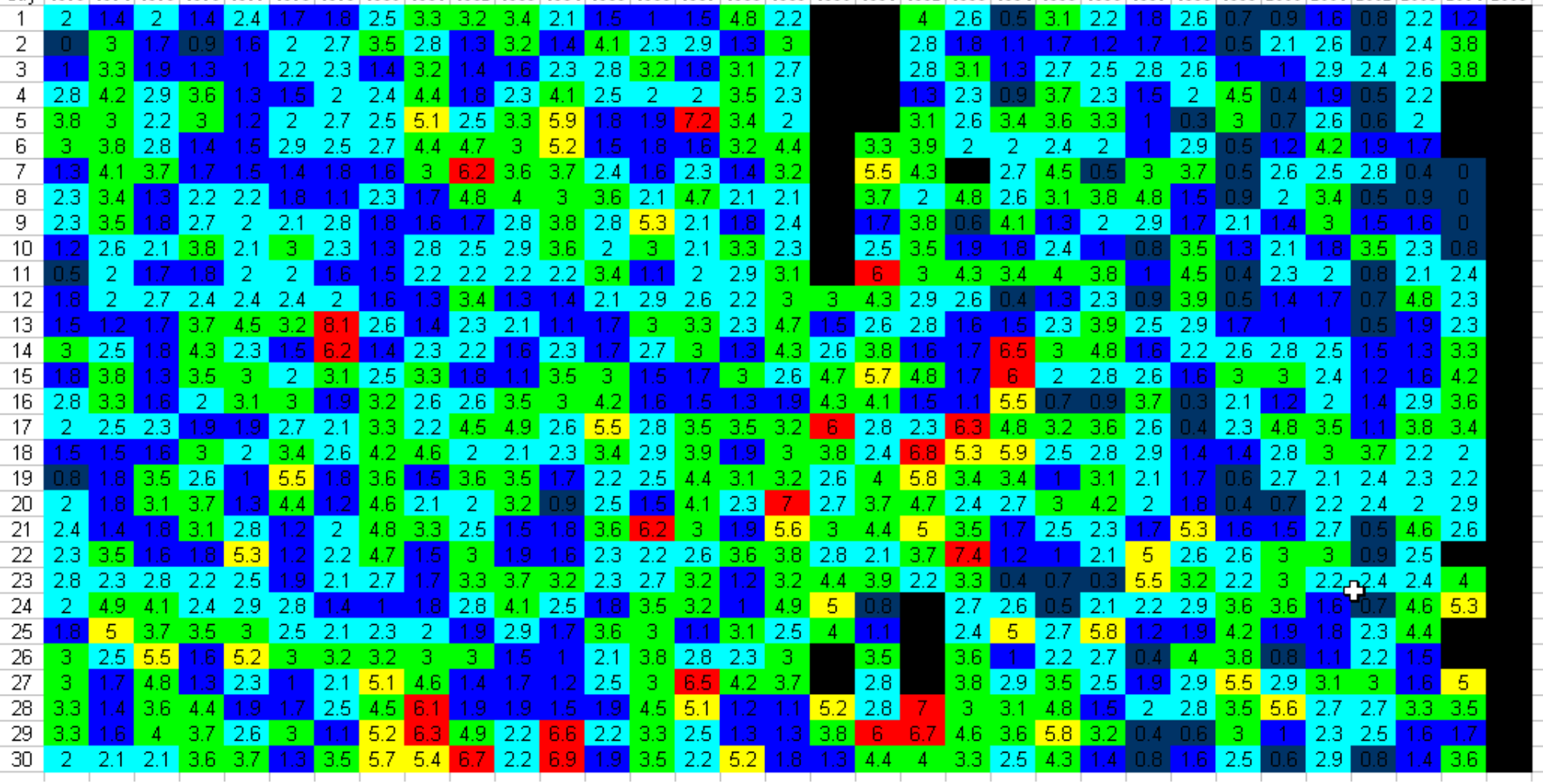
Fort Yukon

Mean daily air temperature (F)
September 1-30, 1973 - 2004

day	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	4.7	16	9.8	9.5	9.8	13	7.3	7.9			6.2	4	13	11	3.5	3.5	11			9.1	7.1	8.6	7	10	12	9.1	8.5	8.1	8.6	10	12	9.4	1.4
2	6.6	17	9.4	9.3	7.3	16	8	-0.2			0.6	3.6	11	12	7.7	5.8	14			8.2	6.4	10	6.3	8	10	11	10	9	9.7	8.2	9	9.9	
3	11	9.4	10	9.1	6.4	15	7.6	-0.8			-0.1	5	9.2	11	8.7	9.6	12			7.5	11	11	6.9	12	11	11	13	6.9	10	11	9.9	8	
4	7.9	5.3	9.1	6.8	6.7	13	6.4	-0.3			2.4	7.7	8.5	9.5	11	12	14			8.2	11	9.6	6.4	9.5	11	10	9	7.9	8.7	10	7.3	3	
5	9.3	6.9	7.9	3.5	6.5	11	7.7	2.6			3.9	5.3	7.4	12	6.5	9.9	9.8			7.8	7.2	8.9	4.2	6.2	10	9.5	8.8	6.2	11	15	9.4	5.7	
6	7.9	8.5	6.4	1.9	6.4	9.9	7.8	1.7			3	3	7.8	12	4.6	8.2	12		7	8.7	12	5.6	3.9	7.7	11	9.6	6.6	5.7	9.1	14	8.2	-1.7	
7	8.6	7.1	1.2	3.8	12	5	8.1	2.7			6.3	2.9	11	12	9.7	7.1	11		6	8.1		9.1	5.5	8.3	8.6	11	6.1	7.4	5.1	10	4.9	3.1	
8	6.3	6.4	1.1	10	11	10	8.4	2.6			7.1	6.5	15	13	7.1	6.7	10		2.7	6.5	8.5	8.6	7.3	6.9	11	9.1	6.5	7.6	8.1	8.4	5.5	2.6	
9	8.6	7.6	4.3	7.4	5.7	10	12	4.5			7.2	7.9	9.2	8.8	2.5	8.4	14		1.8	5.8	6.3	1.3	8.2	3.1	10	9	6.6	5.3	8.3	8.5	7.9	4.4	
10	7.5	6.1	4.3	6.9	6.2	9.6	8.3	6			7.6	6.3	6.6	6.2	2.8	7	18		4.6	-0.9	8.6	0.9	6.8	3.4	8.8	6.6	7.1	4	7.2	5.2	4	0.4	
11	8.4	6.3	3.9	5.6	9.6	6.9	7.8	5.5			9.2	4.6	6.1	7.8	3.2	9.2	13		6.4	-0.1	7.8	3.8	11	1.8	11	5	6.4	6.5	7.6	3	5.9	3.1	
12	6.5	11	6.1	4.9	9.5	8.3	8.3	6.1			8	3.4	2.9	12	4.7	7.8	11	2.4	5.5	0.2	4.3	2.3	8.4	2	8.8	4.4	7.5	5.6	7.1	6.4	4.5	3.8	
13	8	11	7.4	6.6	8.2	14	4.2	9.4			7.2	7.2	5.3	8.5	3.8	6.6	10	3.6	3.6	0.5	7.3	2.5	12	2.8	9.1	4.4	8.7	4.9	4.4	9.7	3.6	4.3	
14	10	11	4.5	9.5	8.7	19	-0.4	6.7			7.4	6.2	5.8	3.5	-0.2	3.6	7.2	7.7	6.4	-1.3	9	3.9	10	2	7.4	2.8	6.1	4.8	8.2	10	1.5	4.5	
15	7.5	10	4.1	8.2	9	13	-0.4	8.3			5.5	9.9	9.8	5.9	-1.3	7.2	4.4	8	7.5	-2	12	2.8	6.3	2	7.1	0.6	4.8	5.2	7.3	7.3	1.3	-0.5	
16	7.8	8.4	8.8	7.2	7.9	9.2	1.8	7.2			5.4	8.7	2.7	8.5	0.3	7	1.9	8.9	11	-3.5	10	1.6	4	0.7	7.4	4.8	5.3	0.2	8.5	9.2	2.5	-1.2	
17		7.9	9.6	7	7.6	6.6	0.9	4.8	4.4		4.4	5.9	2.6	9.7	5.5	8.6	1.6		9.6	-4.7	5.2	0.3	6.4	2.2	7.3	8.2	6.4	1.6	6.3	6		-0.4	
18	8.3	9.5	14	13	10	3.1	-0.6	6.8			2.5	5.9	2.7	10	3.4	7.3	0		6.5	-2.7	1.1	0.6	8.5	4.7	10	6.9	10	-0.4	5.5	8.5		-2.3	
19	5.4	5.5	8.5	11	2.2	4.9	1.1	4.2			0.8	6.7	2.5	8.5	4.3	10	0.1	8.3	14	-3.8	2.6	1.1	7.7	6.8	6.5	6.4	7	2.7	3.9	4.4		-1.6	
20	6.6	7.1	7.1	7.1	4.3	2.5	3	-1.8			1.7	3.1	1.3	7.7	6.5	7.2	-0.3	6.6	7.2	-3	5.7	-1	13	2.8	5.6	8.2	8.7	3	2.9	2.5		2.1	
21	6.6	8.8	4.1	8.2	4.5	1.1	7.1	-4.3			3.2	1.2	-0.4	3.5	4.2	7.6	-2.6	9	8.9	-5.9	7.6	1.5	17	1.5	5	9.6	6.6	3.1	5.3	2.8		5.4	
22	5.8	9.2	2.3	7.4	0.5	2	2.5	-5.3			5.2	1.3	0.5	-0.7	1.3	3.1	-0.4	8.8	0.6	-6.6	0.7	2.4	16	1.3	6.8	5.4	6.1	6.7	6.9	0.4		0.3	
23	3	3.2	2.3	7.7	-0.1	1.7	6.5	-6			-1	2.8	0.8	2.3	4.8	3.1	1	5.7	5.5	-6	0.4	1.7	12	-0.8	7.2	3.3	5.5	5.1	4.7	2.5		2.2	
24	1.9	2.8	-0.3	5	2.4	1.3	7.7	-5.2			-5.6	4.6	1.2	0.4	7.6	1.6	3	4.3	5.1		-0.9	1.2	12	0.8	8	7.1	4.4	0.2	3.8	0.6		-1.3	
25	-0.1	0.8	-2.8	7.4	6.1	3.3	3	-6.4			-9.1	2.1	2	-2	2.8	2	4.8	2.8	5.5		-1.6	0.8	14	-0.2	6.4	3.7	3.2	-1	2.1	5.1		0.5	
26	-2.4	-1.2	-2.9	5.7	6.1	6.6	6.7	-2			-7.1	2.5	-1.6	-1.9	4.3	2	5.7		11		-3.5	-0.9	12	-0.7	8.4	5.9	2.4	-1.2	0.9	5.2		-1.6	
27	0.7	-1.7	-6.3	1.3	2.6	4.8	3.7	0.7			-9.7	3.3	1	-2.2	3.2	2.8	5.7		5.9		-2.5	-0.4	7.9	-2.7	5	3.9	1.8	-0.2	1.4	7.3		-0.6	
28	-2.3	-6.5	-6.6	5.4	4.4	5.1	3.4	-2.6			-7.8	4.2	2.5	-2.2	-1.1	-3.1	0.9	1.9	4.3	-3.7	-4.6	0.5	4	-3.2	4.2	1.4	-1.3	-2.3	0.5	7.9		-1.4	
29	-0.9	-0.3	-4.2	5.4	3.2	5.6	1.1	-0.1			-2.3	3.2	2.8	-4.7	-0.4	-4.4	0.5	1.8	8.6	-7.3	-1	0.6	1	-0.6	5.4	-1.1	-5	-3.8	0	8.2	6.5	-0.9	
30	2.4	-1.4	-3.6	3	1.3	-1.2	2.4	0			3.8	1	3.5	-3.1	-1.5	-0.5	3.6	1	3.2	-5.6	-3	1.1	-0.6	0.1	1.8	-2.6	-5.5	-4.2	0.2	5.2	9.7	-1.9	

Fort Yukon

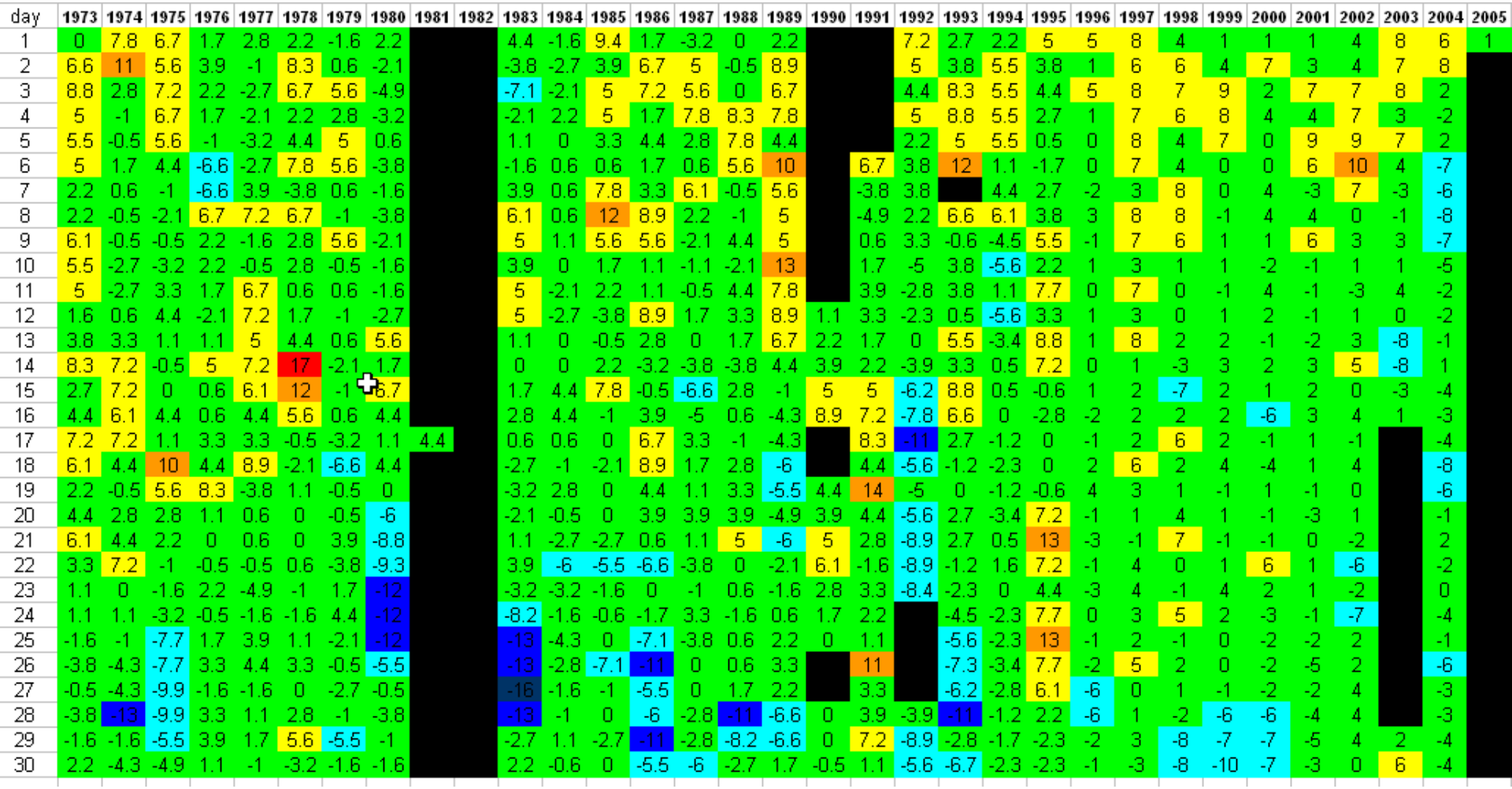
Minimum daily wind speed (mph)
September 1-30, 1973 - 2004



day	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	2	1.4	2	1.4	2.4	1.7	1.8	2.5	3.3	3.2	3.4	2.1	1.5	1	1.5	4.8	2.2			4	2.6	0.5	3.1	2.2	1.8	2.6	0.7	0.9	1.6	0.8	2.2	1.2	
2	0	3	1.7	0.9	1.6	2	2.7	3.5	2.8	1.3	3.2	1.4	4.1	2.3	2.9	1.3	3			2.8	1.8	1.1	1.7	1.2	1.7	1.2	0.5	2.1	2.6	0.7	2.4	3.8	
3	1	3.3	1.9	1.3	1	2.2	2.3	1.4	3.2	1.4	1.6	2.3	2.8	3.2	1.8	3.1	2.7			2.8	3.1	1.3	2.7	2.5	2.8	2.6	1	1	2.9	2.4	2.6	3.8	
4	2.8	4.2	2.9	3.6	1.3	1.5	2	2.4	4.4	1.8	2.3	4.1	2.5	2	2	3.5	2.3			1.3	2.3	0.9	3.7	2.3	1.5	2	4.5	0.4	1.9	0.5	2.2		
5	3.8	3	2.2	3	1.2	2	2.7	2.5	5.1	2.5	3.3	5.9	1.8	1.9	7.2	3.4	2			3.1	2.6	3.4	3.6	3.3	1	0.3	3	0.7	2.6	0.6	2		
6	3	3.8	2.8	1.4	1.5	2.9	2.5	2.7	4.4	4.7	3	5.2	1.5	1.8	1.6	3.2	4.4		3.3	3.9	2	2	2.4	2	1	2.9	0.5	1.2	4.2	1.9	1.7		
7	1.3	4.1	3.7	1.7	1.5	1.4	1.8	1.6	3	6.2	3.6	3.7	2.4	1.6	2.3	1.4	3.2		5.5	4.3		2.7	4.5	0.5	3	3.7	0.5	2.6	2.5	2.8	0.4	0	
8	2.3	3.4	1.3	2.2	2.2	1.8	1.1	2.3	1.7	4.8	4	3	3.6	2.1	4.7	2.1	2.1		3.7	2	4.8	2.6	3.1	3.8	4.8	1.5	0.9	2	3.4	0.5	0.9	0	
9	2.3	3.5	1.8	2.7	2	2.1	2.8	1.8	1.6	1.7	2.8	3.8	2.8	5.3	2.1	1.8	2.4		1.7	3.8	0.6	4.1	1.3	2	2.9	1.7	2.1	1.4	3	1.5	1.6	0	
10	1.2	2.6	2.1	3.8	2.1	3	2.3	1.3	2.8	2.5	2.9	3.6	2	3	2.1	3.3	2.3		2.5	3.5	1.9	1.8	2.4	1	0.8	3.5	1.3	2.1	1.8	3.5	2.3	0.8	
11	0.5	2	1.7	1.8	2	2	1.6	1.5	2.2	2.2	2.2	2.2	3.4	1.1	2	2.9	3.1		6	3	4.3	3.4	4	3.8	1	4.5	0.4	2.3	2	0.8	2.1	2.4	
12	1.8	2	2.7	2.4	2.4	2.4	2	1.6	1.3	3.4	1.3	1.4	2.1	2.9	2.6	2.2	3	3	4.3	2.9	2.6	0.4	1.3	2.3	0.9	3.9	0.5	1.4	1.7	0.7	4.8	2.3	
13	1.5	1.2	1.7	3.7	4.5	3.2	8.1	2.6	1.4	2.3	2.1	1.1	1.7	3	3.3	2.3	4.7	1.5	2.6	2.8	1.6	1.5	2.3	3.9	2.5	2.9	1.7	1	1	0.5	1.9	2.3	
14	3	2.5	1.8	4.3	2.3	1.5	6.2	1.4	2.3	2.2	1.6	2.3	1.7	2.7	3	1.3	4.3	2.6	3.8	1.6	1.7	6.5	3	4.8	1.6	2.2	2.6	2.8	2.5	1.5	1.3	3.3	
15	1.8	3.8	1.3	3.5	3	2	3.1	2.5	3.3	1.8	1.1	3.5	3	1.5	1.7	3	2.6	4.7	5.7	4.8	1.7	6	2	2.8	2.6	1.6	3	3	2.4	1.2	1.6	4.2	
16	2.8	3.3	1.6	2	3.1	3	1.9	3.2	2.6	2.6	3.5	3	4.2	1.6	1.5	1.3	1.9	4.3	4.1	1.5	1.1	5.5	0.7	0.9	3.7	0.3	2.1	1.2	2	1.4	2.9	3.6	
17	2	2.5	2.3	1.9	1.9	2.7	2.1	3.3	2.2	4.5	4.9	2.6	5.5	2.8	3.5	3.5	3.2	6	2.8	2.3	6.3	4.8	3.2	3.6	2.6	0.4	2.3	4.8	3.5	1.1	3.8	3.4	
18	1.5	1.5	1.6	3	2	3.4	2.6	4.2	4.6	2	2.1	2.3	3.4	2.9	3.9	1.9	3	3.8	2.4	6.8	5.3	5.9	2.5	2.8	2.9	1.4	1.4	2.8	3	3.7	2.2	2	
19	0.8	1.8	3.5	2.6	1	5.5	1.8	3.6	1.5	3.6	3.5	1.7	2.2	2.5	4.4	3.1	3.2	2.6	4	5.8	3.4	3.4	1	3.1	2.1	1.7	0.6	2.7	2.1	2.4	2.3	2.2	
20	2	1.8	3.1	3.7	1.3	4.4	1.2	4.6	2.1	2	3.2	0.9	2.5	1.5	4.1	2.3	7	2.7	3.7	4.7	2.4	2.7	3	4.2	2	1.8	0.4	0.7	2.2	2.4	2	2.9	
21	2.4	1.4	1.8	3.1	2.8	1.2	2	4.8	3.3	2.5	1.5	1.8	3.6	6.2	3	1.9	5.6	3	4.4	5	3.5	1.7	2.5	2.3	1.7	5.3	1.6	1.5	2.7	0.5	4.6	2.6	
22	2.3	3.5	1.6	1.8	5.3	1.2	2.2	4.7	1.5	3	1.9	1.6	2.3	2.2	2.6	3.6	3.8	2.8	2.1	3.7	7.4	1.2	1	2.1	5	2.6	2.6	3	3	0.9	2.5	
23	2.8	2.3	2.8	2.2	2.5	1.9	2.1	2.7	1.7	3.3	3.7	3.2	2.3	2.7	3.2	1.2	3.2	4.4	3.9	2.2	3.3	0.4	0.7	0.3	5.5	3.2	2.2	3	2.2	2.4	2.4	4	
24	2	4.9	4.1	2.4	2.9	2.8	1.4	1	1.8	2.8	4.1	2.5	1.8	3.5	3.2	1	4.9	5	0.8		2.7	2.6	0.5	2.1	2.2	2.9	3.6	3.6	1.6	0.7	4.6	5.3	
25	1.8	5	3.7	3.5	3	2.5	2.1	2.3	2	1.9	2.9	1.7	3.6	3	1.1	3.1	2.5	4	1.1		2.4	5	2.7	5.8	1.2	1.9	4.2	1.9	1.8	2.3	4.4		
26	3	2.5	5.5	1.6	5.2	3	3.2	3.2	3	3	1.5	1	2.1	3.8	2.8	2.3	3		3.5		3.6	1	2.2	2.7	0.4	4	3.8	0.8	1.1	2.2	1.5		
27	3	1.7	4.8	1.3	2.3	1	2.1	5.1	4.6	1.4	1.7	1.2	2.5	3	6.5	4.2	3.7		2.8		3.8	2.9	3.5	2.5	1.9	2.9	5.5	2.9	3.1	3	1.6	5	
28	3.3	1.4	3.6	4.4	1.9	1.7	2.5	4.5	6.1	1.9	1.9	1.5	1.9	4.5	5.1	1.2	1.1	5.2	2.8	7	3	3.1	4.8	1.5	2	2.8	3.5	5.6	2.7	2.7	3.3	3.5	
29	3.3	1.6	4	3.7	2.6	3	1.1	5.2	6.3	4.9	2.2	6.6	2.2	3.3	2.5	1.3	1.3	3.8	6	6.7	4.6	3.6	5.8	3.2	0.4	0.6	3	1	2.3	2.5	1.6	1.7	
30	2	2.1	2.1	3.6	3.7	1.3	3.5	5.7	5.4	6.7	2.2	6.9	1.9	3.5	2.2	5.2	1.8	1.3	4.4	4	3.3	2.5	4.3	1.4	0.8	1.6	2.5	0.6	2.9	0.8	1.4	3.6	

Fort Yukon

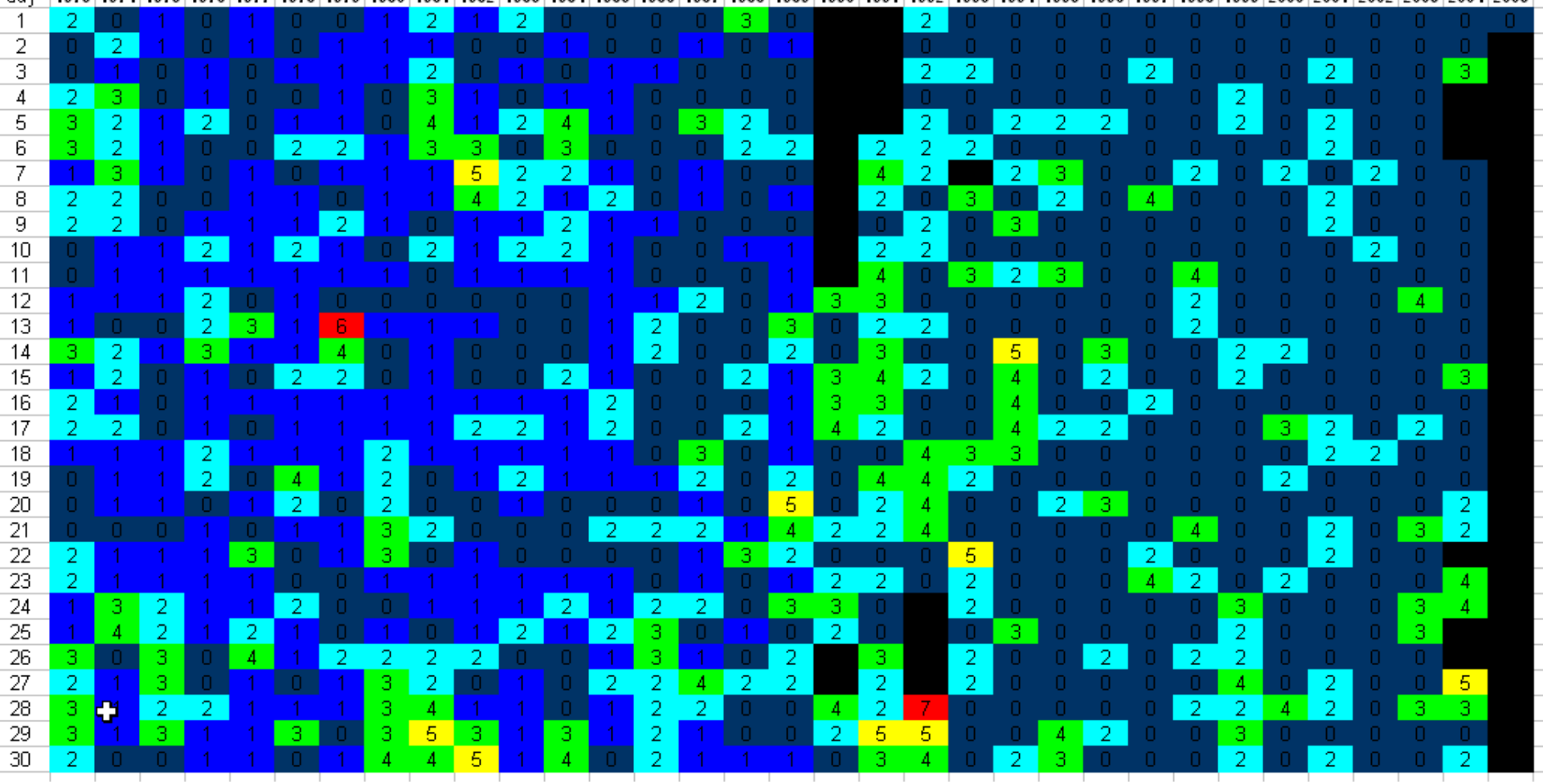
Minimum daily air temperature (F)
September 1-30, 1973 - 2004



day	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	0	7.8	6.7	1.7	2.8	2.2	-1.6	2.2			4.4	-1.6	9.4	1.7	-3.2	0	2.2			7.2	2.7	2.2	5	5	8	4	1	1	1	4	8	6	1
2	6.6	11	5.6	3.9	-1	8.3	0.6	-2.1			-3.8	-2.7	3.9	6.7	5	-0.5	8.9			5	3.8	5.5	3.8	1	6	6	4	7	3	4	7	8	
3	8.8	2.8	7.2	2.2	-2.7	6.7	5.6	-4.9			-7.1	-2.1	5	7.2	5.6	0	6.7			4.4	8.3	5.5	4.4	5	8	7	9	2	7	7	8	2	
4	5	-1	6.7	1.7	-2.1	2.2	2.8	-3.2			-2.1	2.2	5	1.7	7.8	8.3	7.8			5	8.8	5.5	2.7	1	7	6	8	4	4	7	3	-2	
5	5.5	-0.5	5.6	-1	-3.2	4.4	5	0.6			1.1	0	3.3	4.4	2.8	7.8	4.4			2.2	5	5.5	0.5	0	8	4	7	0	9	9	7	2	
6	5	1.7	4.4	-6.6	-2.7	7.8	5.6	-3.8			-1.6	0.6	0.6	1.7	0.6	5.6	10		6.7	3.8	12	1.1	-1.7	0	7	4	0	0	6	10	4	-7	
7	2.2	0.6	-1	-6.6	3.9	-3.8	0.6	-1.6			3.9	0.6	7.8	3.3	6.1	-0.5	5.6		-3.8	3.8		4.4	2.7	-2	3	8	0	4	-3	7	-3	-6	
8	2.2	-0.5	-2.1	6.7	7.2	6.7	-1	-3.8			6.1	0.6	12	8.9	2.2	-1	5		-4.9	2.2	6.6	6.1	3.8	3	8	8	-1	4	4	0	-1	-8	
9	6.1	-0.5	-0.5	2.2	-1.6	2.8	5.6	-2.1			5	1.1	5.6	5.6	-2.1	4.4	5		0.6	3.3	-0.6	-4.5	5.5	-1	7	6	1	1	6	3	3	-7	
10	5.5	-2.7	-3.2	2.2	-0.5	2.8	-0.5	-1.6			3.9	0	1.7	1.1	-1.1	-2.1	13		1.7	-5	3.8	-5.6	2.2	1	3	1	1	-2	-1	1	1	-5	
11	5	-2.7	3.3	1.7	6.7	0.6	0.6	-1.6			5	-2.1	2.2	1.1	-0.5	4.4	7.8		3.9	-2.8	3.8	1.1	7.7	0	7	0	-1	4	-1	-3	4	-2	
12	1.6	0.6	4.4	-2.1	7.2	1.7	-1	-2.7			5	-2.7	-3.8	8.9	1.7	3.3	8.9	1.1	3.3	-2.3	0.5	-5.6	3.3	1	3	0	1	2	-1	1	0	-2	
13	3.8	3.3	1.1	1.1	5	4.4	0.6	5.6			1.1	0	-0.5	2.8	0	1.7	6.7	2.2	1.7	0	5.5	-3.4	8.8	1	8	2	2	-1	-2	3	-8	-1	
14	8.3	7.2	-0.5	5	7.2	17	-2.1	1.7			0	0	2.2	-3.2	-3.8	-3.8	4.4	3.9	2.2	-3.9	3.3	0.5	7.2	0	1	-3	3	2	3	5	-8	1	
15	2.7	7.2	0	0.6	6.1	12	-1	6.7			1.7	4.4	7.8	-0.5	-6.6	2.8	-1	5	5	-6.2	8.8	0.5	-0.6	1	2	-7	2	1	2	0	-3	-4	
16	4.4	6.1	4.4	0.6	4.4	5.6	0.6	4.4			2.8	4.4	-1	3.9	-5	0.6	-4.3	8.9	7.2	-7.8	6.6	0	-2.8	-2	2	2	2	-6	3	4	1	-3	
17	7.2	7.2	1.1	3.3	3.3	-0.5	-3.2	1.1	4.4		0.6	0.6	0	6.7	3.3	-1	-4.3		8.3	-11	2.7	-1.2	0	-1	2	6	2	-1	1	-1		-4	
18	6.1	4.4	10	4.4	8.9	-2.1	-6.6	4.4			-2.7	-1	-2.1	8.9	1.7	2.8	-6		4.4	-5.6	-1.2	-2.3	0	2	6	2	4	-4	1	4		-8	
19	2.2	-0.5	5.6	8.3	-3.8	1.1	-0.5	0			-3.2	2.8	0	4.4	1.1	3.3	-5.5	4.4	14	-5	0	-1.2	-0.6	4	3	1	-1	1	-1	0		-6	
20	4.4	2.8	2.8	1.1	0.6	0	-0.5	-6			-2.1	-0.5	0	3.9	3.9	3.9	-4.9	3.9	4.4	-5.6	2.7	-3.4	7.2	-1	1	4	1	-1	-3	1		-1	
21	6.1	4.4	2.2	0	0.6	0	3.9	-8.8			1.1	-2.7	-2.7	0.6	1.1	5	-6	5	2.8	-8.9	2.7	0.5	13	-3	-1	7	-1	-1	0	-2		2	
22	3.3	7.2	-1	-0.5	-0.5	0.6	-3.8	-9.3			3.9	-6	-5.5	-6.6	-3.8	0	-2.1	6.1	-1.6	-8.9	-1.2	1.6	7.2	-1	4	0	1	6	1	-6		-2	
23	1.1	0	-1.6	2.2	-4.9	-1	1.7	-12			-3.2	-3.2	-1.6	0	-1	0.6	-1.6	2.8	3.3	-8.4	-2.3	0	4.4	-3	4	-1	4	2	1	-2		0	
24	1.1	1.1	-3.2	-0.5	-1.6	-1.6	4.4	-12			-8.2	-1.6	-0.6	-1.7	3.3	-1.6	0.6	1.7	2.2		-4.5	-2.3	7.7	0	3	5	2	-3	-1	-7		-4	
25	-1.6	-1	-7.7	1.7	3.9	1.1	-2.1	-12			-13	-4.3	0	-7.1	-3.8	0.6	2.2	0	1.1		-5.6	-2.3	13	-1	2	-1	0	-2	-2	2		-1	
26	-3.8	-4.3	-7.7	3.3	4.4	3.3	-0.5	-5.5			-13	-2.8	-7.1	-11	0	0.6	3.3		11		-7.3	-3.4	7.7	-2	5	2	0	-2	-5	2		-6	
27	-0.5	-4.3	-9.9	-1.6	-1.6	0	-2.7	-0.5			-16	-1.6	-1	-5.5	0	1.7	2.2		3.3		-6.2	-2.8	6.1	-6	0	1	-1	-2	-2	4		-3	
28	-3.8	-13	-9.9	3.3	1.1	2.8	-1	-3.8			-13	-1	0	-6	-2.8	-11	-6.6	0	3.9	-3.9	-11	-1.2	2.2	-6	1	-2	-6	-6	-4	4		-3	
29	-1.6	-1.6	-5.5	3.9	1.7	5.6	-5.5	-1			-2.7	1.1	-2.7	-11	-2.8	-8.2	-6.6	0	7.2	-8.9	-2.8	-1.7	-2.3	-2	3	-8	-7	-7	-5	4	2	-4	
30	2.2	-4.3	-4.9	1.1	-1	-3.2	-1.6	-1.6			2.2	-0.6	0	-5.5	-6	-2.7	1.7	-0.5	1.1	-5.6	-6.7	-2.3	-2.3	-1	-3	-8	-10	-7	-3	0	6	-4	

Fort Yukon

Minimum daily wind speed (mph)
September 1-30, 1973 - 2004



day	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
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3	0	1	0	1	0	1	1	1	2	0	1	0	1	1	0	0	0			2	2	0	0	0	2	0	0	0	2	0	0	3	
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5	3	2	1	2	0	1	1	0	4	1	2	4	1	0	3	2	0			2	0	2	2	2	0	0	2	0	2	0	0		
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8	2	2	0	0	1	1	0	1	1	4	2	1	2	0	1	0	1		2	0	3	0	2	0	4	0	0	0	2	0	0	0	
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10	0	1	1	2	1	2	1	0	2	1	2	2	1	0	0	1	1		2	2	0	0	0	0	0	0	0	0	0	2	0	0	
11	0	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	1		4	0	3	2	3	0	0	4	0	0	0	0	0	0	
12	1	1	1	2	0	1	0	0	0	0	0	0	1	1	2	0	1	3	3	0	0	0	0	0	0	2	0	0	0	0	4	0	
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25	1	4	2	1	2	1	0	1	0	1	2	1	2	3	0	1	0	2	0		0	3	0	0	0	0	2	0	0	0	3		
26	3	0	3	0	4	1	2	2	2	2	0	0	1	3	1	0	2		3		2	0	0	2	0	2	2	0	0	0	0		
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29	3	1	3	1	1	3	0	3	5	3	1	3	1	2	1	0	0	2	5	5	0	0	4	2	0	0	3	0	0	0	0	0	
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