1962

forest fire DANGER TABLES

District of Mackenzie,
Northwest Territories

FOREST RESEARCH BRANCH
OTTAWA, 1962

Issued under the authority of

The Honourable Hugh John Flemming, P.C., M.P.,

Minister of Forestry

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FOREWORD

These tables provide a consistent means of forest fire danger measurement — a fundamental requirement for forest fire control. The tables were developed from field research to determine the interrelationships of weather, moisture contents of fuels, and fire behaviour in the southern forested areas of the District of Mackenzie and in Wood Buffalo Park.

Included in this edition along with the danger tables and hazard tables for some specific fuel types are relative humidity tables, a wind scale, brief instructions, and examples. The tables are presented so that the Danger Index itself can be found by referring to only one set of facing pages once the few simple weather factors required have been recorded.

An important innovation in this edition is the separate treatment given to ratings for coniferous and deciduous fuel types and the presentation of individual Danger Tables for these fuel complexes for the summer period.

Ottawa, 1962

A.D. Kiil
J.S. Mactavish

GENERAL INSTRUCTIONS

1. Time of Observations

It is important that all weather observations be made at noon. This refers to sun noon, which on your watch is 12:30 p.m., M.S.T. near Fort Smith, 12:40 p.m., M.S.T. near Yellowknife, and 12:05 p.m. P.S.T. near Fort Simpson. However, if it is impossible to make observations then because no observer is at the station, they should be made as soon as possible, but not more than two hours later. If the delay is more than two hours, observations should be considered as missed and the procedure noted in Paragraph 4, below, should be followed. The time of observations should always be noted to the nearest five minutes on the Weather Record.

2. Observations Required

(a) Total rain in inches, should any have fallen since the previous observation. A trace of rain, that is, an amount less than .01 inch, is too small to have a measurable effect on fire danger and is not considered in the tables, though traces of rain should be recorded on the chart with the letter T.

(b) Relative humidity

(c) Wind velocity

Record these observations on the Weather Record and then on the Forest Fire Danger Chart in the appropriate blocks.

3. Rain

(a) In Tables 1 and 2, "Depth of Rain in Inches" refers to the *total* rainfall measured since the Danger Index was last computed.

(b) Work out the Danger Index every day at *noon* unless it is raining.

(c) If it is raining at noon and stops before 2:00 p.m., take the weather readings following the rain and work out the Danger Index.

(d) If it is raining at noon and does not stop before 2:00 p.m., the Danger Index for that day cannot be worked out.

(e) If rain starts between noon and 2:00 p.m., cancel the noon danger index computations.

(f) If this rain stops before 2:00 p.m., make a new set of weather observations and compute the Danger Index.

4. If Observations are Missed

All breaks in weather observations should be avoided except for those missed during rains, as noted in paragraph 3 above. If observations are missed for not more than three days, weather readings from the nearest weather station, if available, should be used to calculate the Danger Index on those days. If no rain has fallen on the intervening days, the Drought Index may be calculated directly. If rain has fallen, the amount in the rain gauge at your station should be considered as having fallen in one rain and used to calculate the Drought Index. It is best to start again as at the beginning of the season if observations are missed for more than three days or if records for the period missed are not available from another station.

5. To Start Records in the Spring

Assume the Final Code Letter to be "L" and the Drought Index 3 on the third day after the snow has cleared enough so that fires might spread, or on the third day after a good rain (about 0.5 inch) if the snow has already gone.

6. When to Change Seasons

(a) SPRING TO SUMMER – After the leaves are fully developed on the poplars and birches, change from the Spring to the Summer sections of Table 4 following a rain of 0.25 inch or more, or in 2 weeks if a rain of this amount has not fallen.

(b) SUMMER TO FALL – After August 21, change from the Summer to the Fall section of Table 4 following a rain of 0.25 inch or more, but not later than September 1.

INSTRUCTIONS FOR CALCULATING FOREST FIRE DANGER

Table 1 – Drought Index

(i) The Drought Index is determined from the last Drought Index worked out, usually yesterday's, and the depth of rain that has fallen since then.

(ii) In the Table, Today's Drought Index is found at the intersection of the line for "Yesterday's Drought Index" and the column for the correct "Depth of Rain".

(iii) Record Today's Drought Index on the Forest Fire Danger Chart.

Table 2 – Rainfall (First Code)

(i) The First Code Letter is determined from the last computed Danger Index, usually yesterday's, and the depth of rain that has fallen since then.

(ii) In the table, Today's First Code Letter is found at the intersection of the line for the "Starting Danger Index", usually yesterday's, and the column for the correct "Depth of Rain".

(iii) During the summer period *always* use the last *Conifer* Danger Index worked out, *never* the *Broad-Leaf* Danger Index, as the "Starting Danger Index".

Table 3 – Relative Humidity and Wind (Final Code)

(i) The Final Code Letter is determined from Today's First Code Letter and today's relative humidity and wind.

(ii) In the table, Today's Final Code Letter is found at the intersection of the line for "Today's First Code Letter" and the column for today's "Wind" speed in the section including today's "Relative Humidity".

Table 4 – Fire Danger Table

(i) Choose the proper section of the table according to season.

(ii) The Danger Index is determined from Today's Final Code Letter and Today's Drought Index.

(iii) In the table, Today's Danger Index is found at the intersection of the line for "Today's Final Code Letter" and the column for "Today's Drought Index", with the following exception. *The Broad-Leaf Danger Index cannot be worked out until the Conifer Danger Index is known.*

(iv) The Broad-Leaf Danger Index in the summer period is found at the intersection of the line for "Today's Conifer Danger Index" and the column for "Today's Drought Index".

(v) Record the Danger Indexes on the Forest Fire Danger Chart.

EXAMPLES

Yesterday		Today's Noon Weather				Today's Calculations				
Drought Index	Danger Index	Rain	R.H.	Wind	Season	Drought Index	First Code	Final Code	Danger Index Conifer	Danger Index Broad-Leaf
11	10	0.00	32	7	Summer	12	N	P	10	4
12	10	0.17	50	3	Summer	8	B	F	3	0
8	3	0.00	21	11	Summer	9	G	M	8	2
9	8	0.00	25	4	Fall	10	L	Q	5	5
10	5	0.11	47	1	Fall	8	C	F	1	1

Table 1 DROUGHT INDEX

Yesterday's Drought Index	Depth of Rain in Inches .00 to .05	.06 to .10	.11 to .14	.15 to .18	.19 to .22	.23 to .30	.31 to .38	.39 to .46	.47 to .54	.55 or more
	Today's Drought Index									
0	1	0	0	0	0	0	0	0	0	0
1	2	1	0	0	0	0	0	0	0	0
2	3	2	1	0	0	0	0	0	0	0
3	4	3	1	0	0	0	0	0	0	0
4	5	4	2	1	0	0	0	0	0	0
5	6	5	3	1	0	0	0	0	0	0
6	7	6	4	2	1	0	0	0	0	0
7	8	7	5	3	2	0	0	0	0	0
8	9	8	6	4	2	1	0	0	0	0
9	10	9	7	5	3	1	0	0	0	0
10	11	10	8	6	4	2	0	0	0	0
11	12	11	9	7	5	3	0	0	0	0
12	13	12	10	8	6	3	1	0	0	0
13	14	13	11	9	7	4	1	0	0	0
14	15	14	12	10	8	5	2	0	0	0
15	16	15	13	11	9	6	3	0	0	0
16	17	16	14	12	10	7	4	1	0	0
17	18	17	15	13	11	8	4	1	0	0
18	19	18	16	14	12	9	5	2	0	0
19	20	19	17	15	13	10	6	3	0	0
20	21	20	18	16	14	11	7	4	1	0
21	22	21	19	17	15	12	8	4	1	0
22	23	22	20	18	16	13	9	5	2	0
23	24	23	21	19	17	14	10	6	3	0
24	25	24	22	20	18	15	11	7	3	0
25	25	25	23	21	19	16	12	8	4	0

Table 2 RAINFALL

Starting Danger Index	Depth of Rain in Inches 0.0	.01 to .02	.03 to .04	.05 to .07	.08 to .12	.13 to .50	.51 or more
	Today's First Code Letter						
0	D	C	C	B	B	A	A
1	E	D	D	B	B	B	A
2	F	E	D	C	B	B	A
3	G	E	D	C	C	B	A
4	H	F	E	C	C	B	A
5	I	F	E	C	C	B	A
6	J	G	E	D	C	B	A
7	K	G	E	D	C	B	A
8	L	G	E	D	C	B	A
9	M	G	E	D	C	B	A
10	N	H	E	E	C	B	A
11	O	H	F	E	C	B	A
12	P	H	F	E	C	B	A
13	Q	I	F	E	C	B	A
14	R	I	G	E	C	B	A
15	S	L	G	E	C	B	A
16	T	L	G	E	C	B	A

Table 3 RELATIVE HUMIDITY and WIND

Today's First Code Letter	Relative Humidity 25% or less — Wind 0 to 4	5 to 8	9 to 12	13 to 17	18 or more	26% to 30% — Wind 0 to 4	5 to 8	9 to 12	13 to 17	18 or more	31% to 40% — Wind 0 to 4	5 to 8	9 to 12	13 to 17	18 or more	41% to 55% — Wind 0 to 4	5 to 8	9 to 12	13 to 17	18 or more	56% to 75% — Wind 0 to 4	5 to 8	9 to 12	13 to 17	18 or more	76% or more — Wind 0 to 4	5 to 8	9 to 12	13 to 17	18 or more
	Today's Final Code Letter																													
A	F	F	G	G	H	F	F	G	G	H	E	E	F	F	G	E	E	F	F	G	C	E	E	F	G	B	C	D	D	E
B	G	G	H	H	I	G	G	H	H	I	F	F	G	G	H	F	F	G	G	H	D	E	F	F	G	C	D	E	E	F
C	H	H	I	J	K	H	H	I	J	K	G	G	H	I	J	F	G	H	H	I	E	F	G	G	H	E	E	E	E	F
D	I	I	J	K	L	H	I	J	K	L	G	H	I	J	K	F	G	H	I	J	E	F	G	G	H	E	F	F	F	G
E	J	J	K	L	M	I	J	K	L	M	H	I	J	K	L	G	H	J	J	K	F	G	G	G	H	F	F	F	F	G
F	K	K	L	L	M	J	K	L	L	M	I	J	K	K	L	G	H	K	K	L	F	H	H	H	I	F	G	G	G	H
G	L	M	M	N	O	K	L	M	M	N	J	K	L	L	M	H	I	K	L	M	G	H	H	H	I	G	G	G	H	I
H	M	N	N	O	P	L	M	N	O	P	K	L	M	N	O	I	J	L	L	M	G	H	I	I	J	G	H	H	H	I
I	M	N	O	P	Q	L	M	N	O	P	K	L	M	N	O	J	K	M	M	N	H	I	J	J	K	G	H	H	I	J
J	N	O	P	Q	R	M	N	O	P	Q	L	M	N	O	P	K	L	M	M	N	I	J	K	K	L	G	H	H	I	J
K	O	P	Q	R	S	N	O	P	P	Q	M	N	O	O	P	K	L	M	M	N	I	J	K	K	L	G	H	H	I	J
L	Q	R	S	S	T	O	P	Q	R	S	N	O	P	Q	R	K	L	N	N	O	J	K	K	L	M	H	I	I	J	K
M	R	S	T	T	T	P	Q	R	S	S	O	P	Q	R	S	L	M	N	N	O	J	K	K	L	M	H	I	I	J	K
N	S	T	T	T	T	Q	R	R	S	S	O	P	Q	R	S	L	M	N	N	O	K	L	L	M	N	I	J	J	J	K
O	T	T	T	T	T	R	R	S	S	T	P	Q	R	R	S	M	N	O	O	P	K	L	L	M	N	I	J	J	K	L
P	T	T	T	T	T	R	S	S	T	T	Q	R	R	S	S	M	N	O	O	P	L	M	M	N	O	J	K	K	K	L
Q	T	T	T	T	T	S	S	T	T	T	Q	R	S	S	T	N	O	P	P	Q	L	M	M	N	O	J	K	K	L	M
R	T	T	T	T	T	S	S	T	T	T	R	S	S	S	T	N	O	P	P	Q	M	N	N	N	O	K	L	L	L	M
S	T	T	T	T	T	S	T	T	T	T	R	S	T	T	T	O	P	P	Q	R	M	N	N	O	P	K	L	L	M	N
T	T	T	T	T	T	T	T	T	T	T	S	T	T	T	T	O	P	Q	Q	R	N	O	O	P	Q	L	M	M	N	O

TABLE 4

FIRE DANGER TABLE

(ALL FUEL TYPES)

SPRING PERIOD

Today's Final Code Letter	Today's Drought Index 0 to 1	2 to 3	4 to 5	6 to 7	8 to 9	10 to 12	13 to 15	16 to 19	20 to 24	25
	Today's Danger Index									
B	0	0	0	0	0	0	1	2	3	4
C	0	0	0	0	0	1	2	3	4	4
D	0	0	0	0	1	2	3	4	4	5
E	0	0	1	1	2	3	4	5	5	6
F	0	1	2	2	3	4	4	5	5	6
G	1	2	2	3	4	4	5	6	6	7
H	1	2	3	4	4	5	5	6	6	7
I	1	3	4	5	5	6	6	7	7	8
J	2	3	4	5	6	6	7	7	8	8
K	2	4	5	6	6	7	7	8	8	9
L	2	4	5	6	7	7	8	8	9	9
M	2	4	6	7	8	8	9	9	10	10
N	3	5	6	7	8	9	9	10	10	11
O	3	5	7	8	9	10	10	11	11	12
P	3	5	7	8	9	10	11	12	12	13
Q	4	6	8	9	10	11	12	13	13	14
R	4	6	8	10	11	12	13	14	14	15
S	5	7	9	11	12	13	14	15	15	16
T	6	8	10	12	13	14	15	16	16	16

FALL PERIOD

Today's Final Code Letter	Today's Drought Index 0 to 3	4 to 10	11 to 17	18 to 24	25
	Today's Danger Index				
B	0	0	0	1	2
C	0	0	0	1	2
D	0	0	1	2	2
E	0	0	1	2	3
F	0	1	2	2	3
G	1	2	2	3	3
H	2	2	2	3	4
I	2	2	3	3	4
J	2	3	3	4	4
K	2	3	3	4	5
L	3	3	4	4	5
M	3	3	4	4	5
N	3	3	4	5	6
O	4	4	5	5	6
P	4	4	5	6	7
Q	4	5	6	7	8
R	5	6	7	8	9
S	5	7	8	10	11
T	6	8	9	11	12

SUMMER PERIOD

CONIFEROUS TYPES

Today's Final Code Letter	Today's Drought Index 0 to 1	2 to 3	4 to 5	6 to 7	8 to 9	10 to 12	13 to 15	16 to 19	20 to 24	25
	Today's Conifer Danger Index									
B	0	0	0	0	0	0	1	2	3	4
C	0	0	0	0	0	1	2	3	4	4
D	0	0	0	0	1	2	3	4	4	5
E	0	0	1	1	2	3	4	5	5	6
F	0	1	2	2	3	4	4	5	5	6
G	1	2	2	3	4	4	5	6	6	7
H	1	2	3	4	4	5	5	6	6	7
I	1	3	4	5	5	6	6	7	7	8
J	2	3	4	5	6	6	7	7	8	8
K	2	4	5	6	6	7	7	8	8	9
L	2	4	5	6	7	7	8	8	9	9
M	2	4	6	7	8	8	9	9	10	10
N	3	5	6	7	8	9	9	10	10	11
O	3	5	7	8	9	10	10	11	11	12
P	3	5	7	8	9	10	11	12	12	13
Q	4	6	8	9	10	11	12	13	13	14
R	4	6	8	10	11	12	13	14	14	15
S	5	7	9	11	12	13	14	15	15	16
T	6	8	10	12	13	14	15	16	16	16

BROAD-LEAVED TYPES

Today's Conifer Danger Index	Today's Drought Index 0 to 1	2 to 3	4 to 5	6 to 7	8 to 9	10 to 12	13 to 15	16 to 19	20 to 24	25
	Today's Broad-Leaf Danger Index									
0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	1	1	1
3	0	0	0	0	0	0	1	1	1	2
4	0	0	0	0	1	1	1	1	2	2
5	1	1	1	1	1	1	1	2	2	3
6	1	1	1	1	1	1	2	2	3	4
7	—	2	2	2	2	2	2	3	3	4
8	—	2	2	2	2	2	3	4	4	5
9	—	—	3	3	3	3	4	4	5	6
10	—	—	3	3	4	4	4	5	6	6
11	—	—	—	4	4	5	5	5	6	7
12	—	—	—	4	5	5	6	6	7	7
13	—	—	—	—	5	6	6	7	8	8
14	—	—	—	—	—	6	7	7	8	9
15	—	—	—	—	-	—	7	8	9	10
16	—	—	—	—	—	—	—	8	10	11

TABLE 5 CLADONIA FIRE HAZARD TABLE*

MAY TO AUGUST (INCL.)

Today's Relative Humidity %	Rain of 0.02 Inch or More Fell: This morning (8 a.m. to noon) A	Last night (6 p.m. to 8 a.m.) B	Days Ago 1	2	3	4	5 or more
	Today's Hazard Index						
0–20	8	10	12	14	16	16	16
21–25	7	9	11	13	15	16	16
26–30	5	7	10	12	14	15	16
31–35	4	6	9	11	13	14	15
36–40	3	5	8	10	12	13	14
41–45	2	4	6	9	11	12	13
46–50	2	3	5	8	10	11	12
51–55	1	2	4	7	9	10	11
56–60	1	2	4	6	8	9	10
61–65	1	1	3	5	7	9	9
66–70	1	1	3	5	7	8	9
71–75	1	1	2	4	6	8	8
76–80	0	1	2	4	6	7	8
81–85	0	1	2	4	5	7	7
86–90	0	0	1	3	5	6	7
91 up	0	0	1	3	4	6	6

SEPTEMBER AND OCTOBER

Today's Relative Humidity %	Rain of 0.02 Inch or More Fell: This morning (8 a.m. to noon) A	Last night (6 p.m. to 8 a.m.) B	Days Ago 1	2	3	4	5 or more
	Today's Hazard Index						
0–20	4	5	6	7	8	10	12
21–25	4	5	5	6	7	9	11
26–30	3	4	4	5	6	8	10
31–35	3	3	4	5	6	7	9
36–40	2	3	3	4	5	6	8
41–45	2	2	3	4	4	5	7
46–50	2	2	2	3	4	5	7
51–55	1	2	2	3	3	4	6
56–60	1	1	2	2	3	4	6
61–65	1	1	1	2	2	3	5
66–70	1	1	1	1	2	3	5
71–75	0	1	1	1	1	2	4
76–80	0	0	1	1	1	2	4
81–85	0	0	0	0	1	2	4
86–90	0	0	0	0	0	1	3
91 up	0	0	0	0	0	1	3

* For use where cladonia is an important fuel under forest cover. Cladonia is often called caribou moss or reindeer moss.

INSTRUCTIONS FOR CALCULATING CLADONIA FIRE HAZARD

1. Choose the proper section of the table according to the month.
2. In the first column on the left find "Today's Relative Humidity".
3. On the same line in the proper column for time since rain, find "Today's Hazard Index".
4. Record this Cladonia Hazard Index on the Forest Fire Danger Chart.

NOTE: Rains of less than 0.02 inch are not used in this table. Times of rainfall are used in the table as follows:

(i) Rain ending after 8 a.m. today — column "A"

(ii) Rain ending between 6 p.m. yesterday and 8 a.m. today — column "B"

(iii) Rain ending yesterday before 6 p.m. — column "1" under "Days Ago".

EXAMPLE: Suppose that on June 20 the relative humidity is 30 per cent and the last rain of 0.02 or more fell on the 19th, ending at 7:30 p.m.

In the first column of the table find the relative humidity class containing 30 per cent. On the same line in column "B" find Today's Cladonia Hazard Index, 7.

SCALE FOR ESTIMATING WIND VELOCITY

For best results this Wind Scale should be used at a well-exposed open place near the forest, with suitable trees for observation. Estimates should be made over a period of at least 5 minutes — the longer the better. If the wind is gusty, estimate the average wind over the whole period.

Effects of Wind	Wind Velocity, miles per hour
Smoke rises vertically; no movement of leaves of bushes or trees.	Less than 1
Leaves of trembling aspen in constant motion; small branches of bushes sway; tall grasses and weeds sway and bend with wind; wind vane barely moves.	1 to 3
Trees of pole size in the open sway gently; wind is felt distinctly on face; loose scraps of paper move; wind flutters small flag.	4 to 7
Trees of pole size in the open sway very noticeably; large branches of trees in the open toss; tops of trees in dense stands sway; wind extends small flag; a few crested waves form on lakes.	8 to 12
Trees of pole size in open sway violently; whole trees in dense stands sway noticeably; dust is raised in road.	13 to 18
Branchlets are broken from trees; inconvenience is felt in walking against wind.	19 to 24
Tops and branches are broken from trees; walkin g against wind is difficult; structural damage; shingles are blown off.	25 to 38

Sample Weather Record and Forest Fire Danger Chart

The example in the following pages shows how weather records are kept and how fire danger charts are prepared.

Weather Record — The weather readings required for the danger index computation are entered in the section headed "Noon Readings" and the time noted. The rainfall, if any, is entered in the next line. Usually a hygrometer is used to determine the relative humidity. The dry bulb and wet bulb readings from this instrument are recorded next and, from them, the relative humidity is determined using the Relative Humidity Tables at the back of this book. The estimated or measured wind velocity is entered in the next line. These are all the weather values necessary to compute the fire danger index. Further information may be filled in according to the instructions of the local supervisor. Spaces are provided at the bottom of the page in which to note, if known, time of beginning and time of ending of rain.

Danger Chart — Rainfall is plotted in the top section of the Danger Chart. A short rain may be shown as an upright line, whereas a long rain is best plotted as a triangle indicating on the 0.00 line the time of beginning and time of ending of each rain. On occasion these times must be estimated. The actual depth of rain is clearly written just above the mark or triangle. Those weather values marked with an asterisk on the weather record are transferred to the Danger Chart and entered in the boxes provided.

The day's Danger Index can then be computed by referring in turn to Tables 1, 2, 3, and 4.

In the example it is assumed that we are starting the records at the beginning of the fire season and that three days have passed since the snow melted enough to allow fires to run. Therefore, according to the "General Instructions" we can assume that for May 6th the Drought Index is 3 and the Final Code Letter, L. Our first noon weather observations, made at 12:30 p.m. on Monday, May 7th, are entered as shown and we may proceed to compute the Danger and Hazard Indexes following the instructions given with the tables.

The same procedure is followed every day except when noon weather readings cannot be taken because of rain. For example, on Friday rain was falling at noon and continued past 2 p.m.; therefore, no weather observations were taken and no index was computed. On Saturday, Thursday's Index, 2, must be used as the "Starting Danger Index" in Table No. 2.

WEATHER RECORD

Fort Smith, NWT. — Forest Weather Station

From May 7 (Month & Date) to May 13 (Month & Date) 19 62 Observer John Doe

Date	7 Mon.	8 Tues.	9 Wed.	10 Thur.	11 Fri.	12 Sat.	13 Sun.
8 A.M. READINGS: Time	0800	0800	0800	0800		0810	0815
Maximum Temperature	72	79	80	71		55	59
Minimum Temperature	38	50	55	53		49	48
Depth of Rain	–	–	–	–		0.12	–
Sky Condition	P.Cloudy	P.Cloudy	Cloudy	Clear		Cloudy	Clear
Visibility Distance	15	15	10	20		12	20
NOON READINGS: Time	1230	1230	1235	1230	1230	1235	1230
* Depth of Rain		T	0.06				
Hygrometer Dry Bulb	74	78	68	72		57	63
Hygrometer Wet Bulb	54	61	55	67		55	51
* Relative Humidity	26	38	44	78	100	89	44
* Wind Velocity	11	8	3	2		5	14
Wind Direction	SW	W	SE	SE		W	NW
Sky Condition	Clear	P.Cloudy	P.Cloudy	Cloudy		P.Cloudy	P.Cloudy
Visibility Distance	20	12	15	10		8	15
OTHER READINGS: Time					1800		
Maximum Temperature					74		
Minimum Temperature					50		
Depth of Rain					1.65		
Hygrometer Dry Bulb					53		
Hygrometer Wet Bulb					51		
Relative Humidity					88		
Wind Velocity					4		
Wind Direction					E		
Sky Condition					Cloudy		
Visibility Distance					10		
TIME RAIN BEGAN		1145	0845	1910	–	During night	
TIME RAIN ENDED		1150	0930	–	1725	0715	
REMARKS							

* Required for computing forest fire danger

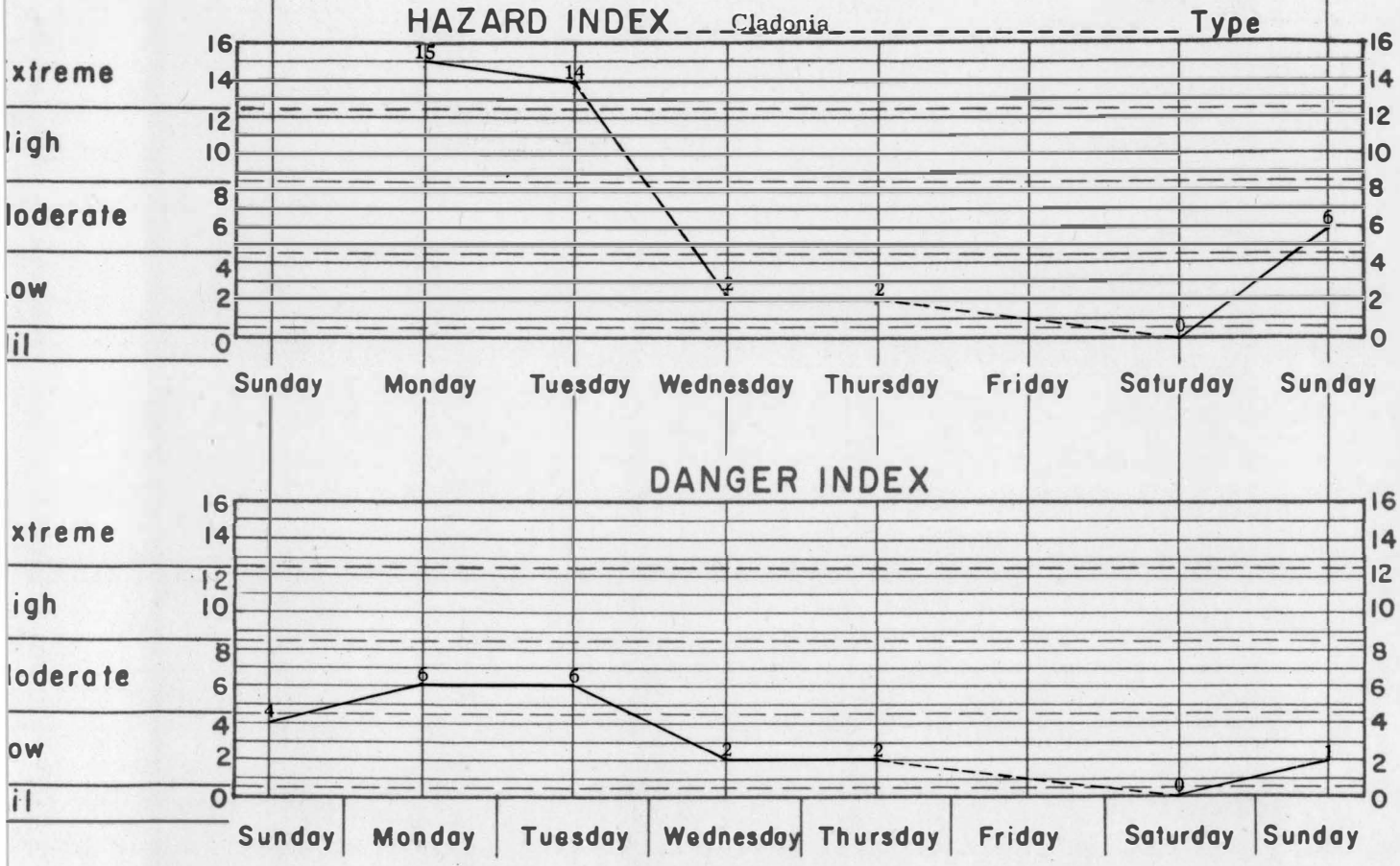
F.B. 906

FOREST FIRE DANGER CHART

Fort Smith, NWT. FOREST WEATHER STATION

From May 6 (Month and date) to May 13 (Month and date) 19 62 Observer John Doe

Date	6 Sunday		7 Monday		8 Tuesday		9 Wednesday		10 Thursday		11 Friday		12 Saturday		13 Sunday	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Rainfall inches						T		0.06				1.65		0.12		
Relative Humidity %			26		38		44		78		100		89		44	
Wind. Vel. m.p.h.			11		8		3		2		–		5		14	
Drought Index	3		4		5		5		6		–		0		1	



RELATIVE HUMIDITY TABLES

Wet-bulb Temperature	Dry-bulb Temperature																														Wet-bulb Temperature
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	
24	4															93	87	81	75	70	65	61	56	52	48	44	40	37	34	31	49
25	12	6	1														94	88	82	76	71	66	61	57	53	49	45	41	38	35	50
26	20	14	9	4														94	88	82	76	71	66	62	58	53	50	46	42	39	51
27	29	23	17	12	7	2													94	88	82	77	72	67	63	58	54	50	47	43	52
28	37	31	25	19	14	9	5													94	88	82	77	72	68	63	59	55	51	48	53
29	46	39	33	27	21	16	11	7	3												94	88	83	77	73	68	64	60	56	52	54
30	55	48	41	35	29	23	18	14	9	5	2											94	88	83	78	73	68	64	60	56	55
31	64	56	49	43	37	31	26	21	16	12	8	4	1										94	89	83	78	74	69	65	61	56
32	73	65	58	51	44	38	33	28	23	18	14	10	6	3										94	89	84	79	74	70	66	57
33	82	73	66	59	52	46	40	34	29	24	20	16	12	8	5	2									94	89	84	79	74	70	58
34	91	82	74	67	60	53	47	41	36	31	26	22	17	14	10	7	4									94	89	84	79	75	59
35		91	83	75	68	61	54	48	43	37	33	28	23	19	15	12	9	6	3								94	89	84	79	60
36			91	83	76	68	62	55	49	44	39	34	29	25	21	17	14	10	7	5	2							94	90	85	61
37				91	84	76	69	62	56	51	45	40	35	31	26	22	19	15	12	9	6	4	1						95	90	62
38					92	84	77	70	63	57	52	46	41	36	32	28	24	20	17	14	11	8	5	3	1					95	63
39						92	84	77	70	64	58	53	47	42	37	33	29	25	22	18	15	12	10	7	5	2					
40							92	85	78	71	65	59	54	48	43	39	35	30	27	23	20	17	14	11	9	6	4	2			
41								92	85	78	71	65	60	54	49	44	40	36	32	28	25	21	18	15	13	10	8	6	4	2	
42									92	85	79	72	66	60	55	50	45	41	37	33	29	26	23	20	17	14	12	9	7	5	
43										93	86	79	73	67	61	56	51	46	42	38	34	31	27	24	21	18	16	13	11	9	
44											93	86	79	73	67	62	57	52	47	43	39	35	32	28	25	22	20	17	14	12	
45												93	86	80	74	68	63	58	53	48	44	40	36	33	30	27	24	21	18	16	
46													93	87	80	74	69	63	58	54	49	45	41	38	34	31	28	25	22	20	
47														93	87	81	75	69	64	59	55	50	46	42	39	35	32	29	26	23	
48															93	87	81	75	70	65	60	55	51	47	43	40	36	33	30	27	

INSTRUCTIONS FOR USING THE RELATIVE HUMIDITY TABLES

1. Find the dry-bulb temperature in the top line of tables.
2. In the columns headed "Wet-bulb Temperature" find the wet-bulb temperature reading.
3. The figure in line with the wet-bulb reading and in the proper dry-bulb column is the relative humidity. If the wet-bulb and dry-bulb temperatures are the same the relative humidity is 100 per cent.

Examples

(i) Dry-bulb 49, wet-bulb 48, humidity is 93 per cent.

(ii) Dry-bulb 50, wet-bulb 49, humidity is 93 per cent.

(iii) Dry-bulb 80, wet-bulb 64, humidity is 41 per cent.

(iv) Dry-bulb 96, wet-bulb 93, humidity is 90 per cent. (Since the wet-bulb temperature 93 is not shown in the table, it is necessary to interpolate the humidity as midway between the figures given for wet-bulbs 92 and 94.)

Wet-bulb Temperature	Dry-bulb Temperature																		
	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82
41																		
42	3	1																
43	7	5	3															
44	10	8	6	4	3	1												
45	13	11	9	8	6	4	3	1										
46	17	15	13	11	9	7	5	4	2	1								
47	21	18	16	14	12	10	8	7	5	4	2	1						
48	25	22	20	17	15	13	11	10	8	7	5	4	2	1				
49	28	26	23	21	19	17	15	13	11	9	8	6	5	4	2	1		
50	32	29	27	24	22	20	18	16	14	12	11	9	7	6	5	4	2	1
51	36	33	30	28	25	23	21	19	17	15	13	12	10	9	7	6	5	4
52	40	37	34	31	29	26	24	22	20	18	16	14	13	11	10	8	7	6
53	44	41	38	35	32	30	27	25	23	21	19	17	15	14	12	11	9	8
54	48	45	42	39	36	33	31	28	26	24	22	20	18	16	15	13	12	10
55	53	49	46	43	40	37	34	32	29	27	25	23	21	19	17	16	14	13
56	57	53	50	47	44	40	38	35	33	30	28	26	24	22	20	18	17	15
57	62	58	54	51	47	44	41	39	36	34	31	29	27	25	23	21	19	18
58	66	62	58	55	51	48	45	42	40	37	34	32	30	28	26	24	22	20
59	70	66	62	59	55	52	49	46	43	40	38	35	33	31	29	27	24	23
60	75	71	67	63	59	56	53	49	46	44	41	38	36	34	31	29	27	25
61	80	76	71	67	64	60	56	53	50	47	44	42	39	37	34	32	30	28
62	85	80	76	72	68	64	60	57	54	51	48	45	42	40	37	35	33	31
63	90	85	80	76	72	68	64	61	58	54	51	48	46	43	41	38	36	34
64	95	90	85	81	77	72	69	65	61	58	55	52	49	46	44	41	39	37
65		95	90	85	81	77	73	69	65	62	59	55	52	50	47	44	42	40
66			95	90	86	81	77	73	69	66	63	59	56	53	50	47	45	43
67				95	90	86	82	78	73	70	66	63	60	57	54	51	48	46
68					95	90	86	82	78	74	70	67	63	60	57	54	51	49
69						95	90	86	82	78	74	70	67	64	60	57	54	52
70							95	91	86	82	78	74	71	67	64	61	57	55
71								95	91	86	82	78	75	71	68	64	61	58
72									95	91	87	83	79	75	71	68	64	62
73										95	91	87	83	79	75	72	68	65
74											96	91	87	83	79	76	72	69
75												96	91	87	83	79	76	72
76													96	91	87	83	79	76
77														96	91	87	83	80
78															96	91	87	84
79																96	91	88
80																	96	92
81																		96

Wet-bulb Temperature	Dry-bulb Temperature																		
	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
54	9	8	7	6	5	4	3	2	1									
55	11	10	9	8	7	6	5	4	3	2	1	1						
56	14	12	11	10	9	8	7	6	5	4	3	2	1	1				
57	16	15	13	12	11	10	9	8	7	6	5	4	3	3	2	1		
58	19	17	16	14	13	12	11	10	9	8	7	6	5	4	4	3	2	1
59	21	20	18	17	15	14	13	12	11	9	8	8	6	6	5	4	4	3
60	24	22	20	19	17	16	15	14	12	11	10	9	8	7	7	6	5	4
61	26	25	23	21	20	18	17	16	14	13	12	11	10	9	8	7	7	6
62	29	27	25	24	22	21	19	18	16	15	14	13	12	11	10	9	8	7
63	31	30	28	26	24	23	21	20	18	17	16	15	14	13	12	11	10	9
64	34	32	30	29	27	25	23	22	21	19	18	17	16	15	14	13	12	11
65	37	35	33	31	29	28	26	24	23	22	20	19	17	17	15	14	13	12
66	40	38	36	34	32	30	28	27	25	24	22	21	19	18	17	16	15	14
67	43	41	38	37	34	33	31	29	27	26	24	23	21	20	19	18	17	16
68	46	44	41	39	37	35	33	32	29	28	26	25	23	22	21	20	18	18
69	49	47	44	42	40	38	36	34	32	30	28	27	25	24	23	22	20	19
70	52	50	47	45	42	41	38	37	34	33	31	29	28	26	25	24	22	21
71	55	53	50	48	45	43	41	39	37	35	33	32	30	29	27	26	24	23
72	58	56	53	51	48	46	43	42	39	38	35	34	32	31	29	28	26	25
73	62	59	56	54	51	49	46	44	42	40	38	36	34	33	30	30	28	27
74	65	63	59	57	54	52	49	47	44	43	40	39	36	35	33	32	30	29
75	69	66	63	60	57	55	52	50	47	45	43	41	39	37	35	34	32	31
76	72	70	66	63	60	58	55	53	50	48	45	44	41	40	38	36	34	33
77	76	73	70	67	63	61	58	56	53	51	48	46	44	42	40	39	36	35
78	80	77	73	70	67	64	61	59	56	54	51	49	46	45	41	41	39	37
79	84	80	77	74	70	67	64	62	59	57	54	52	49	47	45	43	41	40
80	88	84	80	77	74	71	67	65	62	59	57	54	52	50	47	46	43	42
81	92	88	84	81	77	74	71	68	65	62	59	57	54	53	50	48	46	44
82	96	92	88	85	81	78	74	71	68	65	62	60	57	55	53	51	48	47
83		96	92	88	85	81	78	75	71	69	65	63	60	58	55	53	51	49
84			96	92	88	85	81	78	75	72	69	66	63	61	58	56	53	52
85				96	92	88	85	81	78	75	72	69	66	64	61	59	56	54
86					96	92	88	85	81	78	75	72	69	67	64	61	59	57
87						96	92	89	85	82	78	75	72	70	67	64	61	59
88							96	92	89	85	82	79	75	73	70	67	64	62
89								96	92	89	85	82	79	76	73	70	67	65
90									96	92	89	86	82	79	76	73	70	68
92										96	93	89	86	82	79	76	74	
94												96	93	89	86	83	80	
96														96	93	89	86	
98																96	93	