

PRELIMINARY IMPROVED  
FIRE HAZARD INDEX TABLES  
FOR PINE FORESTS AT  
PETAWAWA FOREST EXPERIMENT STATION

By J.G. Wright

CANADA

These tables have been designed in an attempt to simplify the work of the forest manager. They were established in 1929 and have been revised. The present tables, like those of the DOMINION FOREST SERVICE, measure rainfall in reducing the risk of fire by increasing the relative humidity in reducing the risk of evaporation. Factors for wind velocity and seasonal variation have been added and in many other respects the new tables differ from the old ones.

To avoid the necessity of separate tables for each forest type, use is made of a single Tracer Index on a scale of 0 to 180 which includes all moisture conditions from complete saturation to absolute dryness. This Tracer Index is PRELIMINARY IMPROVED FIRE HAZARD INDEX TABLES FOR PINE FORESTS AT PETAWAWA FOREST EXPERIMENT STATION.

When the seasonal effects of rainfall, wind and evaporation have been computed, it is used with Table I and Table II, the Fire Hazard Index, in each successive By J.G. Wright Division of Forest Protection

1 - 4	- Low
5 - 8	- Moderate
9 - 12	- High
13 - 16	- Very High

Table IV gives the correction to be applied to the results from Table III to allow for the effect of wind velocity on the rate of spread of fire.

Weather Observations

(1) Rainfall is measured at OTTAWA, CANADA, 1/100 inch. Depth of rain, in inches, is determined in hours accumulated, and on 1937 each day a 24 hour sample check.

(2) Evaporation is measured on the 1/100 inch evaporimeter in a well exposed site on the south side. The number of cubic centimeters of water lost is multiplied by the coefficient of the instrument, converted into the number of milliliters and compared with the previous reading. Below this figure the difference will be shown.

(3) Relative humidity is estimated from the observations in the open. The value used is the mean of the average of the last two hour readings obtained. This may be obtained closely enough with a plain surface thermometer.

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*ventilated... by taking...  
readings at 2.15 p.m. and using the lower...  
of the two readings. on the short side  
day.*

(4) These tables have been designed in an attempt to simplify the Fire Hazard Tables by the same author, published in 1933 and widely used since that date. The present tables, like the earlier ones, trace the effects of rainfall in reducing the hazard, and of evaporation and relative humidity in raising the hazard. Correction factors for wind velocity and seasonal variations have been added and in many other respects the new tables differ from the old ones.

To avoid the necessity of separate tables for each forest type, use is made of a single Tracer Index on a scale of 0 to 150 which includes all moisture conditions from complete saturation to absolute dryness. This Tracer Index is computed by means of Table I which gives the effect of amount and duration of rainfall, and Table II which gives the effect of relative humidity and evaporation.

When the common Tracer Index for all types has been computed, it is used with Table III to find the Hazard Index in each particular pine type and season of the year. The Hazard Index has the following values:

0	-	No hazard
1 - 4	-	Low hazard
5 - 8	-	Moderate hazard
9 - 12	-	High "
13 - 16	-	Extreme "

Table IV gives the correction to be applied to the results from Table III to allow for the effect of wind velocity on the rate of spread of fire.

#### Weather Observations

(1) Rainfall is measured in the open to the nearest  $1/100$  inch. Depth of rain, time of occurrence and duration in hours are noted, and entered on the fire-hazard chart each day. (See sample chart at back)

(2) Evaporation is measured by the standard Wright evaporimeter in a well exposed site in the open. The pan is filled to the tip of the spike each day at 6.00 p.m. The number of cubic centimeters of water added, multiplied by the coefficient of the instrument (usually 0.40) gives the number of Livingston units of evaporation since the previous reading. Enter this figure on the chart each day as shown.

(3) Relative humidity is observed at a well exposed site in the open. The value used with the tables is the average of the lowest two hour period in the day. This may be obtained closely enough with a sling psychrometer or well

ventilated Mason type hygrometer (in the shade) by taking readings at 2.15 p.m. and 4.15 p.m. and using the lower of the two readings. Enter this figure on the chart each day.

(4) The wind velocity used is the average velocity in miles per hour between 2.00 p.m. and 4.00 p.m. at about ten feet above the tree crowns. If no anemometer is available, the wind scale at the back may be used. The wind velocity should be entered on the chart, although it has been omitted in error from the sample chart at the back.

Starting Point  
When Beginning to Use Tables

Either of the following methods may be used, but the first is preferable:

(a) On the third dry day following rain, assume the Tracer Index to be 135.

(b) Or, on the third consecutive day with rains of at least 0.30 inches each day, or on the fourth consecutive day with rains of at least 0.20 inches each day, assume the Tracer Index to be 50.

How to Use the Tables

The hazard for the day is worked out each evening after the evaporation record is made at 6.00 p.m. Unless it happens to be raining, both the tracer index and the hazard index worked out from the day's weather records, are shown on the chart at the five o'clock point.

Table I - Effect of Rainfall

(1) Select the section showing the duration of rainfall nearest to that observed.

(2) In the left hand column headed Initial Tracer Index, select the tracer index existing before the rain started. Opposite this, in the proper depth of rain column, will be found the new tracer index at the time the rain stopped. Enter this on the chart at the proper hour.

The following simple rules should be memorized and observed.

(a) For Initial Tracer Index, use the tracer index worked out for the preceding afternoon, except in the following cases:

(b) In the case of rain starting between 10.00 p.m. and 8.00 a.m., the Initial Tracer Index must be determined as follows:

If the tracer index the previous afternoon was:

130 or less, use it without correction  
131-134, use 130  
135 or more, subtract 5

(c) If the rain occurs between 8.00 a.m. and noon only, use the tracer index of the previous afternoon with the Rainfall table. Then use Table II to get the new late afternoon index.

(d) If the rain occurs in the afternoon, use Table II with the day's evaporation and tracer index of the previous afternoon first, to find the index at the time the rain started.

(e) If a short rain occurs around noon, divide the day's evaporation into two parts. Use one half with Table II first, to get the index before rain. Then use Table I for the effect of rain, followed by Table II with the other half of the evaporation.

(f) When showers occur intermittently with short intervals between them, the total amount of rain and the total time from the beginning of the first shower to the end of the last should be used.

(g) If two or more distinct rains occur with intervals of an hour or more between them, only the total time when rain is actually falling should be used.

(h) If rains are separated by five hours or more during daylight hours, so that the tree crowns become dry in the interval, they should be treated as two distinct rains.

(i) Traces of rain (less than .01 inch) should be ignored in all cases.

(j) For accurate results, table values should be interpolated to the nearest whole tracer index unit.

#### Table II (Drying Table)

(1) Select the section with the relative humidity heading nearest to that observed.

(2) In the left hand column headed Initial Tracer Index, select the tracer index existing before the drying started, that is, either the one of the previous afternoon, or one computed following rain, as the case requires. Opposite this index, in the proper evaporation column, will be found the new tracer index. Enter this on the chart at the proper hour, as per sample.

If the total evaporation for the day (24 hours) is 3 Livingston Units or less, ignore it. This can only occur during long, steady rains and the Rainfall Table allows for such evaporation.

#### Table III - Hazard Index

This table shows the hazard index in each forest type corresponding to any given tracer index. The table is divided into four sections corresponding to different periods during the fire season. The time of "fresh leaf fall" varies somewhat from year to year and is the time when the autumn fall of pine needles begins to become

conspicuous, usually about September 15th.

- (1) Select the section headed with the appropriate date period.
- (2) In the left hand column headed Tracer Index, select the tracer index computed for the day in question. Opposite this, in the desired forest type column, read the hazard index for that type, and note it for correction by Table IV.

On days when the hazard index is zero, the tracer index will afford an indication as to how far the forest type in question is from a condition of hazard.

#### Table IV - Wind Correction

This correction to the Hazard Index is intended to allow for the influence of wind on the intensity and rate of spread of going fires. The influence of wind, insofar as it affects the drying of the forest, is allowed for in the evaporation applied in Table II. (For the purpose of checking the Tables by means of duff samples or small test fires, the wind correction should not be applied.)

In use, Table IV is applied as a correction to the Hazard Index derived from Table III. Corrections are added or subtracted according to sign, and full instructions are given at the bottom of the Table. The corrected Hazard Index should be plotted on the chart as shown.

#### General Remarks

The values given in the Tables cover the range of conditions normally encountered in Eastern Canada. Situations may occasionally arise when values occur beyond the range of the Tables. In such cases the nearest Table values should be used rather than any attempt to extrapolate beyond their limits. Ultimately it is hoped to extend the tables to cover every possible range.

For accurate results within the range covered, Table values should be interpolated to the nearest unit.

#### Statistical Data

For those interested in statistics, there follows descriptions of the forest sites at the Potawawa Forest Experiment Station in which the basic data were collected, and statistical tests of the accuracy of the Tables.

##### 1. Descriptions of field sites in which basic observations were made.

###### (a) Red Pine

Stand - red pine, 85%, white pine, 10%, others, 5%  
Age - 60 years  
Crown canopy - 72%  
Exposure - Westerly slope, fair wind exposure.

(b) White Pine

Stand - White pine, 75%, spruce, 15%, others, 10%  
Age - 60 years  
Crown canopy - 96%  
Exposure - Level ground adjacent to clearing;  
well exposed to north and west.

(c) Jack Pine

Stand - Jack pine, 80%, red and white pine, 20%  
Age - 60 years  
Crown canopy - 50%  
Exposure - Slight northerly slope; fair  
wind exposure

(d) Fast Drying Mixed Red and White Pine

Stand - Red pine, 30%, white pine, 70%  
Age - 60 years  
Crown canopy - 87%  
Exposure - Northwesterly slope; adjacent to  
clearing, very well exposed to  
prevailing winds.

(e) Slow Drying Mixed Red and White Pine

Stand - Red pine, 30%, white pine 70%  
Age - 50 years  
Crown canopy - 96%  
Exposure - Fairly level ground, sheltered  
from wind

(f) Mixed Red, White and Jack Pine

Stand - Red pine, 20%, white pine, 50%, jack pine 30%  
Age - 60 years  
Crown canopy - 83%  
Exposure - Slight westerly slope; fairly  
well sheltered from wind.

Note: Crown canopy measured with Clements' photometer on  
or about the summer solstice.

2. Reliability of the tracer index in indicating  
top layer duff moisture content, within the range of  
inflammability, in each type, up to the time of autumn  
leaf fall, checked on basic data, using top layer duff  
samples. Sampling error neglected:-

Statistic	Red Pine	White Pine	Jack Pine	R.-W.Pine Fast Dry.	R.-W.Pine Slow Dry.	R.W. J.Pine
No. obs. in basic data	115	100	42	77	102	67
Net agg. dev. % moist. content	-0.02	-0.04	+0.06	+0.05	+0.06	-0.07
Prob.error of estimate within range of inflam- mability % moist content.	±1.94	±1.17	±1.80	±1.46	±1.91	±2.03

3. Approximate reliability of the hazard index (without wind correction) in indicating inflammability shown by small test fires at mid-afternoon, based on a normal fire season. Data after fresh leaf-fall included in all types except mixed red, white and jack pine. (Not aggregate deviation less than 0.1 hazard index units in all cases, with bias, if any, on the safe side);

TABLE I.

Page A

**EFFECT OF RAINFALL  
IN LOWERING INITIAL TRACER INDEX**

**RAINS OF  $\frac{1}{2}$  HOUR DURATION (OR LESS)**

Initial Tracer Index	Depth of Rain in Inches												.60	.80	1.00	1.50
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40				
50	46	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
55	51	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
60	56	54	54	54	53	53	53	53	53	53	53	53	53	53	53	53
65	61	59	58	58	57	57	57	57	57	57	57	57	57	57	57	57
70	66	64	62	62	61	61	61	60	60	60	60	60	60	60	60	60
75	71	68	67	66	65	65	64	63	63	63	63	63	63	63	63	63
80	76	73	71	70	69	68	67	66	66	66	66	66	66	66	66	66
85	81	78	76	74	72	71	70	69	68	67	67	67	67	67	67	67
90	86	83	80	78	76	74	73	71	70	69	69	69	69	69	69	69
95	91	87	85	82	79	78	75	74	71	70	70	70	70	70	70	70
100	96	92	89	84	83	81	78	76	73	72	71	71	71	71	71	71
105	101	97	93	90	87	84	80	78	74	73	73	73	73	73	73	73
110	106	102	98	94	90	87	84	80	76	75	74	74	74	74	74	74
115	111	106	102	98	93	90	86	82	78	76	75	75	75	75	75	75
120	116	111	106	102	97	93	88	84	79	77	77	76	76	76	76	76
125	121	116	111	106	101	97	90	87	81	79	78	78	78	78	78	78
130	126	121	115	110	105	100	93	88	82	80	80	79	79	79	79	79
135	131	125	120	114	108	103	96	91	84	81	81	81	81	81	81	81
140	136	130	124	118	112	106	98	93	86	83	82	81	81	81	81	81

**RAINS OF 1 HOUR DURATION**

Initial Tracer Index	Depth of Rain in Inches												.60	.80	1.00	1.50
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40				
50	48	45	44	44	44	44	43	43	43	43	43	43	43	43	43	43
55	53	50	49	49	48	48	47	47	47	47	47	47	47	47	47	47
60	58	55	54	53	53	52	52	51	51	51	51	51	51	51	51	51
65	63	59	58	57	56	56	55	55	55	55	55	55	55	55	55	55
70	68	64	62	61	60	59	59	59	58	58	58	58	58	58	58	58
75	73	69	67	66	65	64	63	62	61	61	61	61	61	61	61	61
80	78	76	71	70	68	67	66	65	64	63	63	63	63	63	63	63
85	83	83	76	74	72	71	69	67	66	65	65	65	65	65	65	65
90	88	83	80	78	76	74	71	70	68	67	66	66	66	66	66	66
95	93	88	85	82	79	77	74	72	69	68	68	68	68	68	68	68
100	98	93	89	86	83	80	77	74	71	70	69	69	69	69	69	69
105	103	97	94	90	86	84	79	76	73	72	72	72	72	72	72	72
110	108	102	98	94	90	87	82	78	74	73	72	72	72	72	72	72
115	113	108	102	98	93	89	84	81	76	74	73	73	73	73	73	73
120	118	112	107	102	97	93	87	83	78	76	75	75	75	75	75	75
125	123	116	111	105	100	96	89	85	79	78	77	76	76	76	76	76
130	128	121	115	109	103	99	92	87	81	79	78	78	78	78	78	78
135	133	126	119	113	107	102	95	89	83	80	79	79	79	79	79	79
140	138	130	124	117	111	105	97	91	85	82	81	81	81	81	81	81

Depth of Rain in Inches

.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50
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TABLE I. (Cont'd)

**EFFECT OF RAINFALL  
IN LOWERING INITIAL TRACER INDEX**

**RAINS OF 2 HOURS DURATION**

Initial Tracer Index	Depth of Rain in Inches					RAINS OF 2 HOURS DURATION												
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50	
50	50	49	47	46	45	44	43	42	41	40	40	40	40	40	40	40	40	
55	55	53	51	50	49	48	46	45	44	44	43	43	43	43	43	43	43	
60	60	57	56	54	53	52	50	49	48	47	47	47	47	47	47	47	47	
65	65	62	60	58	57	56	54	53	51	50	50	50	50	50	50	50	50	
70	70	67	64	62	61	59	57	56	54	53	53	53	52	52	52	52	52	
75	75	71	69	66	65	63	61	59	57	56	55	55	55	55	55	55	55	
80	80	76	73	71	69	67	64	62	60	59	58	58	58	58	58	58	58	
85	85	80	77	75	72	70	67	64	62	61	60	60	60	60	60	60	60	
90	90	85	81	78	76	74	70	67	64	63	63	62	62	62	62	62	62	
95	95	89	85	82	79	77	73	70	67	65	64	64	64	64	64	64	64	
100	100	94	89	86	83	80	76	72	69	67	67	66	66	66	66	66	66	
105	105	98	94	89	86	82	78	74	71	69	68	68	68	68	68	68	68	
110	110	103	98	93	89	85	80	77	72	71	70	70	69	69	69	69	69	
115	115	107	102	97	92	88	83	79	74	72	72	71	71	71	71	71	71	
120	120	112	106	100	95	91	85	81	76	74	73	73	73	73	72	72	72	
125	125	116	110	104	98	94	87	83	78	76	75	74	74	74	73	73	73	
130	130	121	114	107	101	97	90	85	80	77	76	76	75	75	75	75	75	
135	135	125	118	110	104	99	92	87	81	78	77	77	76	76	76	76	76	
140	140	130	122	114	107	102	94	89	83	80	79	78	78	78	77	77	77	
		.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50

**RAINS OF 3 HOURS DURATION**

Initial Tracer Index	Depth of Rain in Inches					RAINS OF 3 HOURS DURATION												
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50	
50	50	50	50	48	46	45	43	42	40	39	38	38	38	38	38	38	38	
55	55	55	55	52	50	49	47	45	43	42	41	41	41	41	41	41	41	
60	60	60	59	56	54	53	50	49	46	45	44	44	44	44	44	44	44	
65	65	65	63	60	58	56	53	52	49	48	47	47	47	47	47	47	47	
70	70	70	67	64	62	60	57	55	52	51	50	50	50	50	50	50	50	
75	75	74	71	68	66	63	60	58	55	54	53	52	52	52	52	52	52	
80	80	78	75	72	69	67	63	61	58	57	56	55	55	55	55	55	55	
85	85	83	79	76	73	70	66	64	61	59	58	57	57	57	57	57	57	
90	90	87	83	79	76	74	70	67	63	62	61	60	60	60	60	60	60	
95	95	91	87	83	80	77	72	69	65	64	63	62	62	61	61	61	61	
100	100	95	91	87	83	80	75	71	67	66	65	64	64	63	63	63	63	
105	105	100	95	90	86	82	77	73	70	68	66	66	66	65	64	64	64	
110	110	104	99	93	89	85	79	76	72	70	68	68	67	67	66	66	66	
115	115	108	103	97	92	88	82	78	73	71	69	69	68	68	67	67	67	
120	120	113	106	100	95	90	84	80	75	72	71	71	70	70	69	69	69	
125	125	117	110	103	97	92	86	81	76	74	73	72	71	71	70	70	70	
130	130	121	113	106	100	94	87	83	78	76	74	73	73	72	72	72	72	
135	135	125	117	109	102	96	89	85	80	77	75	74	74	74	73	73	73	
140	140	130	120	111	105	98	91	87	81	78	77	76	76	75	75	74	74	
		.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50

TABLE I. (Cont'd)

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EFFECT OF RAINFALL  
IN LOWERING INITIAL TRACER INDEX

Initial Tracer Index	RAINS OF 5 HOURS DURATION																
						Depth of Rain in Inches											
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50
50	50	50	50	50	50	49	46	44	41	39	38	37	37	37	36	36	36
55	55	55	55	55	55	53	50	47	44	42	41	41	40	40	39	39	39
60	60	60	60	60	58	56	53	51	47	46	44	44	43	42	42	42	42
65	65	65	65	65	62	60	57	54	51	49	47	47	46	46	45	45	45
70	70	70	70	69	66	64	60	57	54	52	50	50	49	49	48	48	48
75	75	75	75	73	70	67	63	60	57	55	53	52	52	51	51	51	51
80	80	80	80	76	73	71	67	64	60	58	56	55	55	54	54	53	53
85	85	85	84	80	76	73	69	66	62	60	58	58	57	56	56	56	56
90	90	90	87	83	79	76	71	68	64	63	61	60	59	58	58	58	58
95	95	95	91	86	82	78	73	70	66	64	62	61	60	60	60	60	60
100	100	100	94	89	84	80	75	72	68	66	64	63	62	62	61	61	61
105	105	104	97	92	87	82	77	73	69	67	65	64	63	62	62	62	62
110	110	108	101	95	90	85	79	75	70	68	66	65	64	64	63	63	63
115	115	112	104	97	92	87	81	76	72	69	67	66	65	65	64	64	64
120	120	116	108	100	95	89	83	78	73	70	68	67	66	66	65	65	65
125	125	120	111	102	97	92	84	79	74	71	69	68	67	67	67	67	66
130	130	124	114	105	99	94	86	81	75	72	70	69	69	68	68	68	68
135	135	128	117	107	101	95	87	82	76	73	71	70	69	69	69	69	69
140	140	132	119	109	103	97	88	83	78	73	72	71	71	70	70	70	70
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50

Initial Tracer Index	RAINS OF 8 HOURS DURATION																
						Depth of Rain in Inches											
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50
50	50	50	50	50	50	50	50	49	44	41	38	37	37	36	36	35	35
55	55	55	55	55	55	55	55	52	47	44	42	40	40	39	39	39	39
60	60	60	60	60	60	60	59	56	51	48	45	44	43	43	42	42	42
65	65	65	65	65	65	65	62	59	54	51	48	47	46	46	45	45	45
70	70	70	70	70	70	70	65	62	57	54	51	50	49	49	48	48	48
75	75	75	75	75	75	73	68	64	60	57	54	53	52	51	51	51	51
80	80	80	80	80	80	76	71	67	62	60	57	56	55	54	53	53	53
85	85	85	85	85	82	78	73	69	64	62	59	58	57	56	55	55	55
90	90	90	90	89	84	80	75	71	66	64	61	60	59	58	57	57	57
95	95	95	95	91	87	82	77	73	68	65	62	60	59	59	58	58	58
100	100	100	100	94	89	85	79	75	69	66	63	61	61	60	60	59	59
105	105	105	103	96	90	86	79	76	70	67	64	62	61	61	60	59	59
110	110	110	107	98	92	87	81	76	70	67	64	63	62	62	61	60	60
115	115	115	111	100	94	88	82	77	71	68	65	63	62	62	61	61	61
120	120	120	114	103	96	90	83	78	72	68	65	64	63	63	62	61	61
125	125	125	117	105	98	92	84	79	72	69	66	64	63	63	62	62	62
130	130	130	120	106	100	94	85	80	73	70	66	65	64	64	63	62	62
135	135	135	122	110	101	95	86	81	74	70	66	65	64	64	63	63	63
140	140	140	125	112	103	96	87	82	74	71	67	66	65	64	64	63	63
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50

TABLE I. (Cont'd)

Page D.

## EFFECT OF RAINFALL IN LOWERING INITIAL TRACER INDEX

RAINS OF 12 HOURS DURATION																	
Tracer Index	Initial					Depth of Rain in Inches					Final						
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50
50	50	50	50	50	50	50	50	50	50	45	40	38	37	36	36	36	36
55	55	55	55	55	55	55	55	55	52	48	43	41	40	39	39	39	39
60	60	60	60	60	60	60	60	60	55	51	46	44	43	43	42	42	42
65	65	65	65	65	65	65	65	65	58	54	49	47	46	46	45	45	45
70	70	70	70	70	70	70	70	68	61	57	52	50	49	49	48	48	48
75	75	75	75	75	75	75	75	70	63	60	55	53	52	51	50	50	50
80	80	80	80	80	80	80	77	72	66	62	57	55	54	54	53	53	53
85	85	85	85	85	85	85	79	74	68	64	59	57	56	56	53	53	53
90	90	90	90	90	90	88	80	76	69	65	61	59	58	58	57	57	56
95	95	95	95	95	95	91	82	77	71	67	63	61	59	58	58	58	57
100	100	100	100	100	100	92	84	78	72	68	64	62	61	60	59	58	58
105	105	105	105	105	101	93	85	78	72	68	65	63	61	60	59	59	58
110	110	110	110	110	102	95	85	79	72	68	65	63	61	60	59	59	58
115	115	115	115	114	102	95	85	79	72	69	65	63	62	61	59	59	58
120	120	120	120	114	102	95	85	80	73	69	65	63	62	61	60	59	58
125	125	125	125	114	102	95	85	80	74	69	66	63	62	61	60	59	58
130	130	130	130	115	103	95	85	81	74	70	66	63	62	61	60	59	58
135	135	135	135	115	104	95	86	81	74	70	66	63	62	61	60	59	58
140	140	140	137	116	104	95	86	81	74	70	66	64	62	61	60	59	58
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.50

RAINS OF 16 HOURS DURATION (or more)																	
Initial Tracer Index						Depth of Rain in Inches											
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.5
New Tracer Index													.	.	.	.	.
50	50	50	50	50	50	50	50	50	50	48	41	38	37	36	36	36	36
55	55	55	55	55	55	55	55	55	55	51	43	40	40	39	39	38	38
60	60	60	60	60	60	60	60	60	60	53	46	43	42	42	42	42	42
65	65	65	65	65	65	65	65	65	62	56	50	47	45	45	44	44	44
70	80	80	80	80	80	80	80	80	65	59	53	50	49	48	48	47	47
75	75	75	75	75	75	75	75	75	68	61	55	53	51	51	50	50	50
80	80	80	80	80	80	80	80	80	69	64	58	55	54	54	53	53	53
85	85	85	85	85	85	85	85	80	71	66	60	57	56	56	55	55	55
90	90	90	90	90	90	90	86	80	72	68	62	59	58	58	57	57	56
95	95	95	95	95	95	95	87	81	73	69	63	60	59	59	58	58	57
100	100	100	100	100	100	100	88	82	74	70	64	62	61	60	60	59	58
105	105	105	105	105	105	101	89	82	74	70	64	62	61	61	60	59	58
110	110	110	110	110	110	101	89	83	74	70	65	62	61	61	60	59	58
115	115	115	115	115	115	102	89	83	75	70	65	62	61	61	60	59	58
120	120	120	120	120	115	102	89	83	75	70	65	62	62	61	60	59	58
125	125	125	125	125	115	102	90	83	75	70	65	63	62	61	60	59	58
130	130	130	130	130	115	102	91	83	75	70	65	63	62	61	60	59	58
135	135	135	135	135	115	102	91	83	75	70	65	63	62	61	60	59	58
140	140	140	140	136	115	102	91	84	75	70	65	63	62	61	60	59	58
	.01	.02	.03	.04	.05	.06	.08	.10	.15	.20	.30	.40	.50	.60	.80	1.00	1.5

TABLE II.

Page A

EFFECT OF RELATIVE HUMIDITY AND EVAPORATION  
IN CHANGING TRACER INDEX

Initial Tracer Index	Avr. 2 Hour Min. R.H. 20%							Avr. 2 Hour Min. R.H. 25%							
	Evaporation Per Day (L.U.)							Initial Tracer Index	Evaporation Per Day (L.U.)						
	30	35	40	50	60	70			30	35	40	50	60	70	New Tracer Index
35								35							
40								40							
45								45							
50								50	115	119					
55								55	116	121	125				
60	119	122	127					60	118	122	127				
65	121	124	128					65	120	124	127				
70	123	126	129	131				70	122	126	128	131			
75	125	127	130	132				75	125	127	129	132			
80	127	129	131	133	135			80	126	129	131	132	135		
85	128	130	132	133	135			85	128	129	131	133	135		
90	130	131	132	134	136			90	129	130	132	133	136		
95	132	133	133	135	137			95	131	132	133	134	137		
100	132	134	134	136	137	139		100	132	133	134	136	137	138	
105	134	135	135	137	138	139		105	133	134	134	136	137	138	
110	135	136	136	138	139	140		110	134	135	135	137	138	139	
115	136	137	137	138	139	140		115	135	136	136	137	138	139	
120	137	138	138	139	140	141		120	136	137	137	138	139	139	
125	138	139	139	140	141	141		125	136	137	137	138	139	140	
128	139	139	140	141	141	142		128	137	137	138	139	139	140	
129	139	140	140	141	141	142		129	138	138	138	139	139	140	
130	140	140	140	141	142	142		130	138	138	138	139	140	140	
131	140	140	140	141	142	142		131	138	138	138	139	140	140	
132	140	140	141	141	142	142		132	138	138	139	139	140	140	
133	140	140	141	141	142	142		133	138	139	139	139	140	140	
134	140	141	141	142	142	143		134	139	139	139	140	140	141	
135	141	141	141	142	142	143		135	139	139	139	140	140	141	
136	141	141	141	142	142	143		136	139	140	140	140	140	141	
137	141	141	142	142	143	143		137	140	140	140	141	141	141	
138	141	142	142	142	143	143		138	140	140	141	141	141	141	
139	142	142	142	142	143	143		139	140	141	141	141	141	142	
140	142	142	142	143	143	143		140	141	141	141	142	142	142	
141	142	142	142	143	143	143		141	141	141	142	142	142	142	
142	142	142	143	143	143	144		142	141	142	142	142	142	143	
143	142	143	143	143	143	144		143	142	142	142	142	143	143	
	30	35	40	50	60	70			30	35	40	50	60	70	

TABLE 11. (Con't)

Page B.

## EFFECT OF RELATIVE HUMIDITY AND EVAPORATION IN CHANGING TRACER INDEX

Avr. 2 Hr. Min. R.H. 30%

Initial Tracer Index	Evaporation Per Day (L.U.)							
	20	25	30	35	40	50	60	70
	New Tracer Index							
35								
40	93							
45	96							
50	100	107						
55	103	110						
60	106	112	118	122	126			
65	109	115	120	123	127			
70	113	118	122	125	128	131		
75	116	120	124	127	129	132		
80	119	122	126	128	130	132	134	
85	122	124	127	129	131	133	135	
90	124	126	129	130	132	133	135	
95	126	128	130	131	133	134	136	
100	128	130	131	132	133	135	136	138
105	129	131	132	133	134	136	137	138
110	131	132	133	134	135	136	137	138
115	132	133	134	135	135	137	138	138
120	133	134	135	135	136	137	138	138
125	134	135	135	136	136	137	138	138
128	135	135	136	136	137	138	138	138
129	135	136	136	136	137	138	138	139
130	135	136	136	137	137	138	138	139
131	136	136	137	137	137	138	138	139
132	136	137	137	137	138	138	138	139
133	137	137	137	138	138	138	139	139
134	137	137	138	138	138	138	139	139
135	137	138	138	138	138	139	139	139
136	138	138	139	139	139	139	139	140
137	138	138	139	139	139	140	140	140
138	139	139	139	140	140	140	140	140
139	139	139	140	140	140	140	140	141
140	139	140	140	140	140	141	141	141
141	140	140	141	141	141	141	141	141
142	140	140	141	141	141	141	142	142
143	141	141	141	141	141	142	142	142
	20	25	30	35	40	50	60	70

TABLE 11. (Con't.)

Page C.

EFFECT OF RELATIVE HUMIDITY AND EVAPORATION  
IN CHANGING TRACER INDEX

Avr. 2 Hr. Min. R.H. 35%.

Initial Tracer Index.	Evaporation Per Day (L.U.)							
	20	25	30	35	40	50	60	70.
	New Tracer Index							
35								
40	92							
45	96							
50	99	106						
55	102	110						
60	105	112	117	124	126			
65	108	114	120	124	127			
70	112	117	121	125	128	130		
75	115	120	123	127	128	132		
80	118	122	125	128	130	132	134	
85	121	123	127	129	130	133	134	
90	123	126	128	129	131	133	134	
95	126	128	129	130	132	134	136	
100	127	129	131	131	132	134	136	137
105	128	130	132	132	133	135	136	137
110	130	130	132	133	134	135	136	138
115	130	131	133	133	134	136	137	138
120	131	132	133	134	135	136	137	138
125	132	134	134	135	136	136	137	138
128	134	134	135	135	136	137	137	138
129	134	135	135	135	136	137	137	138
130	134	135	135	136	136	137	137	138
131	135	135	136	136	136	137	138	138
132	135	136	136	136	137	137	138	138
133	136	136	136	137	137	137	138	138
134	136	136	136	137	137	138	138	138
135	136	137	137	137	138	138	138	138
136	137	137	137	138	138	138	138	139
137	137	137	138	138	138	139	139	139
138	138	138	138	138	139	139	139	140
139	138	139	139	139	139	139	139	140
140	139	139	139	140	140	140	140	140
141	139	139	140	140	140	141	141	141
142	139	140	140	141	141	141	142	142
143	140	140	140	141	141	141	142	142
	20	25	30	35	40	50	60	70

TABLE 11. (Cont'd.)

Page D.

EFFECT OF RELATIVE HUMIDITY AND EVAPORATION  
IN CHANGING TRACER INDEX.

Avr. 2 Hr. Min. R.H. 40%

Initial Tracer Index.	Evaporation Per Day (L.U.)										
	10	12	15	18	20	25	30	40	50	60	70
New Tracer Index.											
35	52	58	67	78	88						
40	60	65	73	83	91						
45	66	71	79	88	95	103					
50	73	78	84	92	98	106					
55	80	84	90	96	101	109					
60	87	90	95	101	104	111	117	126			
65	93	96	101	105	108	114	119	127			
70	99	102	106	109	111	116	121	128	130		
75	105	107	110	112	115	119	123	128	131		
80	109	111	114	116	117	121	124	129	132	133	
85	112	114	116	118	120	123	126	130	132	134	
90	115	117	119	121	123	125	127	131	133	134	
95	118	120	122	123	125	127	129	131	133	135	
100	121	122	124	125	126	128	130	132	134	135	136
105	123	124	125	127	128	129	131	133	135	136	136
110	125	126	127	128	129	130	132	133	135	136	137
115	126	127	128	129	130	131	132	134	135	136	137
120	128	129	130	130	132	133	134	136	136	136	137
125	129	130	130	131	131	133	134	135	136	136	137
128	130	131	132	132	133	133	134	135	136	136	137
129	131	132	132	133	134	134	134	135	136	136	137
130	131	132	133	133	133	134	134	135	136	137	137
131	132	132	133	133	134	134	135	135	136	137	137
132	132	133	133	134	134	135	135	136	136	137	137
133	133	133	134	134	135	135	135	136	136	137	137
134	133	134	134	135	135	135	136	136	137	137	137
135	134	134	135	135	136	136	136	137	137	137	138
136	134	135	136	136	136	136	137	137	137	138	138
137	135	135	136	136	137	137	137	137	138	138	138
138	136	136	137	137	137	137	138	138	138	139	139
139	136	137	137	137	138	138	138	138	139	139	139
140	137	137	138	138	138	138	139	139	139	140	140
141	138	138	138	139	139	139	139	139	140	140	141
142	138	139	139	139	139	139	140	140	140	141	141
143	139	139	139	140	140	140	140	140	141	141	142
	10	12	15	18	20	25	30	40	50	60	70

TABLE 11. (Cont'd.)

Page E.

EFFECT OF RELATIVE HUMIDITY AND EVAPORATION  
IN CHANGING TRACER INDEX.

Avr. 2 Hr. Min. R.H. 45%.

Initial Tracer Index	Evaporation per Day (L.U.)								
	10	12	15	18	20	25	30	40	50
	New Tracer Index.								
35	52	57	66	77	87				
40	59	64	72	82	90				
45	66	71	78	87	94	104			
50	73	77	84	92	97	107			
55	79	83	89	96	100	109			
60	86	89	95	100	103	111	117	127	
65	92	95	100	104	107	114	119	127	
70	98	101	105	109	111	115	121	128	132
75	104	106	109	112	114	118	122	128	132
80	108	110	113	116	117	120	123	129	133
85	111	113	115	118	119	123	124	129	133
90	115	117	119	121	123	125	127	131	133
95	117	119	121	122	124	126	128	131	133
100	120	121	123	124	125	127	129	131	134
105	122	124	125	126	127	128	129	131	134
110	124	125	126	127	128	129	131	133	134
115	125	126	127	128	129	130	131	133	135
120	127	127	129	129	130	131	132	133	135
125	128	129	129	130	131	132	133	134	135
128	130	130	131	131	132	132	133	134	135
129	130	131	131	132	132	133	133	134	135
130	130	131	132	132	132	133	134	134	135
131	131	131	132	133	133	134	134	134	135
132	132	132	132	133	133	134	134	135	136
133	132	133	133	133	134	135	135	136	136
134	133	133	134	134	134	135	135	136	137
135	134	134	134	135	135	135	136	136	137
136	134	135	135	135	136	136	136	137	137
137	135	135	135	136	136	137	137	137	138
138	136	136	136	137	137	137	138	138	138
139	136	136	137	137	137	138	138	138	138
140	136	137	138	138	138	138	138	139	139
141	137	138	138	138	139	139	139	139	140
142	138	138	139	139	139	139	140	140	140
143	138	139	139	139	140	140	140	140	141
	10	12	15	18	20	25	30	40	50

TABLE 11. (Con't.)

Page F.

EFFECT OF RELATIVE HUMIDITY AND EVAPORATION  
IN CHANGING TRACER INDEX

Avr. 2HR. Min. R.H. 50%.

Initial Tracer Index.	Evaporation Per Day (L.U.)									
	5	10	12	15	18	20	25	30	40	50
	New Tracer Index.									
35	42	52	56	65	76	86				
40	49	59	63	71	81	90				
45	56	66	70	77	86	93	105			
50	63	72	76	83	91	97	107			
55	70	79	83	89	96	100	109			
60	77	85	89	94	100	103	111	117	127	
65	84	91	95	99	104	107	113	118	127	
70	90	97	101	104	108	110	115	120	128	133
75	96	102	105	108	112	113	117	121	128	133
80	101	107	109	112	115	116	119	124	129	134
85	106	111	113	115	117	119	122	125	129	134
90	109	114	116	118	119	121	123	126	130	134
95	112	116	118	120	122	123	125	127	131	134
100	115	119	120	122	123	125	126	128	131	134
105	118	121	123	124	125	126	128	129	132	134
110	120	123	124	126	126	127	128	130	132	134
115	122	124	125	127	127	128	129	131	133	135
120	124	126	127	128	128	129	130	131	133	135
125	125	127	128	129	129	130	131	132	134	135
128	127	129	129	130	130	131	132	133	134	135
129	128	129	130	131	131	131	132	133	134	135
130	128	130	130	131	131	131	132	133	134	135
131	129	130	131	131	132	132	133	133	134	135
132	130	131	132	132	132	133	133	134	135	135
133	130	131	132	132	133	133	134	134	135	136
134	131	132	132	133	133	134	134	134	136	136
135	132	133	133	134	134	134	135	135	136	137
136	132	133	134	134	135	135	135	136	136	137
137	133	134	134	135	135	135	136	136	137	137
138	134	135	135	135	136	136	137	137	137	138
139	134	135	136	136	136	137	137	138	138	138
140	135	136	136	137	137	137	138	138	139	139
141	136	137	137	138	138	138	138	139	139	139
142	137	137	138	138	139	139	139	139	140	140
143	137	138	139	139	139	139	140	140	140	140
	5	10	12	15	18	20	25	30	40	50

TABLE 11. (Con't.)

Page G.

EFFECT OF RELATIVE HUMIDITY AND EVAPORATION  
IN CHANGING TRACER INDEX

AVR. 2 HR. MIN. R.H. 60%

Initial Tracer Index.	Evaporation Per Day (L.U.)								
	5	10	12	15	18	20	25	30	40
	New Tracer Index								
35	40	49	54	64	76	85			
40	47	56	61	70	81	89			
45	54	63	68	75	85	92	104		
50	61	70	74	81	90	96	106		
55	68	77	81	87	94	99	108		
60	74	83	87	92	98	102	110	117	130
65	81	89	93	98	102	106	112	119	130
70	87	95	99	102	106	109	114	120	130
75	94	100	103	107	110	112	117	122	131
80	99	105	107	110	113	115	119	123	131
85	103	109	111	114	116	117	121	124	131
90	107	112	114	116	118	120	123	126	131
95	110	115	117	119	120	122	124	127	132
100	114	117	119	121	122	124	126	128	132
105	117	120	121	123	124	125	127	129	132
110	119	122	123	124	125	126	128	129	132
115	120	123	124	125	126	127	128	130	133
120	122	124	125	126	127	128	129	131	133
125	124	126	127	128	128	129	130	132	133
128	126	128	128	129	129	130	131	132	134
129	126	128	129	129	130	131	131	133	134
130	127	129	129	130	130	131	132	133	134
131	128	129	130	130	131	131	132	133	134
132	128	130	130	131	132	132	133	134	134
133	129	130	131	132	132	132	133	134	135
134	129	131	131	132	132	133	134	134	135
135	130	131	132	133	133	134	134	135	136
136	131	132	133	133	134	134	135	135	136
137	132	133	134	134	135	135	135	136	137
138	132	134	134	135	135	136	136	137	137
139	133	134	135	136	136	136	137	137	138
140	134	135	136	136	137	137	137	138	139
141	135	136	137	137	137	138	138	139	139
142	136	137	137	138	138	138	139	139	140
143	137	138	138	139	139	139	140	140	141
	5	10	12	15	18	20	25	30	40

TABLE 11. (Con't.)

Page H.

EFFECT OF RELATIVE HUMIDITY AND EVAPORATION  
IN CHANGING TRACER INDEX.

AVR. 2 HR. MIN. R.H. 70%

Initial Tracer Index	Evaporation Per Day (L.U.)							
	5	10	12	15	18	20	25	30
	New Tracer Index							
35	39	47	51	62	73	84		
40	46	54	59	68	78	87		
45	52	61	66	74	83	91	103	
50	59	68	72	79	88	94	106	
55	66	75	79	85	93	98	108	
60	72	81	85	91	97	101	110	119
65	79	87	92	96	101	104	112	120
70	85	93	97	101	105	108	115	121
75	91	98	101	105	109	111	117	123
80	97	103	105	109	112	114	119	124
85	101	107	109	112	115	117	121	125
90	105	110	112	115	117	119	122	126
95	109	113	115	117	119	121	123	127
100	112	116	118	119	121	123	125	128
105	115	119	120	121	123	124	126	129
110	118	120	121	123	124	125	127	129
115	119	122	123	124	125	126	128	130
120	121	123	124	125	126	127	128	130
125	124	126	126	127	128	129	130	131
128	126	127	128	129	129	130	131	132
129	126	128	129	129	130	130	131	132
130	127	128	129	130	130	131	132	133
131	127	129	130	130	131	131	132	133
132	128	129	130	131	131	132	133	134
133	129	130	131	131	132	132	133	134
134	129	131	131	132	132	133	134	134
135	130	131	132	133	133	133	134	135
136	131	132	133	133	134	134	135	135
137	132	133	133	134	134	135	135	136
138	132	133	134	134	135	135	136	137
139	133	134	135	135	136	136	137	137
140	134	135	135	136	136	137	137	138
141	134	136	136	137	137	137	138	139
142	135	136	137	137	138	138	139	139
143	136	137	138	138	139	139	139	140
	5	10	12	15	18	20	25	30

TABLE II. (Cont'd)

EFFECT OF RELATIVE HUMIDITY AND EVAPORATION IN  
CHANGING TRACER INDEX

Initial Tracer Index	Avr. 2 Hour Min. R.H. 80%						Initial Tracer Index	Avr. 2 Hour Min. R.H. 90%					
	Evaporation Per Day (L.U.)							Evap. Per Day (L.U.)					
	5	10	12	15	18	20		5	10	12	15	New Tracer Index	
35	37	45	50	60	73	83	35	36	44	49	59		
40	44	52	57	66	78	87	40	43	51	56	65		
45	50	59	64	72	82	90	45	49	58	63	70		
50	57	66	70	78	87	93	50	55	64	69	76		
55	63	73	77	84	91	97	55	61	71	76	82		
60	70	79	83	89	95	100	60	68	77	82	88		
65	76	85	89	94	99	103	65	74	83	88	93		
70	82	91	95	99	103	107	70	80	90	93	98		
75	89	97	100	103	107	110	75	86	95	98	102		
80	94	101	104	107	111	113	80	91	99	102	106		
85	99	105	108	111	114	116	85	96	103	106	109		
90	103	109	111	113	116	118	90	101	107	109	112		
95	107	111	113	116	118	120	95	105	110	112	115		
100	111	114	116	118	120	122	100	109	113	115	117		
105	114	117	118	120	121	123	105	112	116	117	119		
110	116	119	120	122	123	124	110	115	118	119	121		
115	119	121	122	123	124	125	115	118	121	121	122		
120	121	123	124	125	126	126	120	121	123	124	125		
125	124	126	126	127	128	128	125	124	125	126	127		
128	126	127	128	129	129	130	128	125	127	128	129		
129	126	128	128	129	130	130	129	126	128	128	129		
130	127	128	129	130	130	131	130	127	128	129	130		
131	127	129	129	130	131	131	131	127	129	129	130		
132	128	129	130	131	131	132	132	128	129	130	131		
133	129	130	131	131	132	132	133	129	130	131	131		
134	129	131	131	132	132	133	134	129	131	131	132		
135	130	131	132	132	133	133	135	130	131	132	133		
136	131	132	133	133	134	134	136	131	132	133	133		
137	131	133	133	134	134	135	137	131	133	133	134		
138	132	133	134	135	135	135	138	132	133	134	135		
139	133	134	135	135	136	136	139	133	134	135	135		
140	134	135	135	136	137	137	140	133	135	136	136		
141	134	136	136	137	137	138	141	134	136	136	137		
142	135	136	137	137	138	138	142	135	136	137	138		
143	136	137	138	138	139	139	143	136	137	138	138		
	5	10	12	15	18	20		5	10	12	15		

TABLE III  
HAZARD INDEX  
CORRESPONDING TO TRACER INDEX

Page A

May 21 -- July 20

Tracer Index	Red Pine	White Pine	Jack Pine	Mixed Fast Drying	Red & White Pine Slow Drying	Mixed Red, White and Jack Pine
	Hazard Index					
95	0	0	0	0	0	0
100	1	0	0	0	0	0
105	2	0	0	1	0	0
110	3	0	0	2	0	0
111	3	0	0	2	0	0
112	3	0	0	2	0	0
113	3	0	0	2	0	0
114	3	0	0	3	0	0
115	3	0	0	3	0	0
116	4	0	1	3	0	0
117	4	0	1	3	0	0
118	4	0	1	4	0	0
119	5	0	1	4	0	0
120	5	0	2	4	0	0
121	5	0	2	5	0	0
122	6	0	2	5	0	0
123	6	0	3	5	0	0
124	6	0	3	6	0	0
125	7	0	4	6	0	0
126	7	0	4	6	0	0
127	8	0	5	7	0	0
128	8	0	6	7	0	0
129	9	0	6	8	0	0
130	9	1	7	8	0	2
131	10	2	8	9	1	2
132	10	3	9	9	2	3
133	11	4	10	10	3	4
134	12	5	10	10	4	5
135	12	6	11	11	5	6
136	13	8	12	12	7	7
137	14	9	13	12	8	9
138	14	11	14	13	9	10
139	15	12	15	14	11	11
140	15	13	15	15	12	12
141	16	14	16	16	13	14
142	16	16	16	16	14	15
143	16	16	16	16	16	16

TABLE III  
HAZARD INDEX  
CORRESPONDING TO TRACER INDEX

July 21st to August 20th

Tracer Index	Red Pine	White Pine	Jack Pine	Mixed Red & White Pine Fast Dry-ing Site	Slow Dry-ing Site	Mixed Red, White and Jack Pine
	Hazard Index					
95	0	0	0	0	0	0
100	1	0	0	0	0	0
105	2	0	0	0	0	0
110	3	0	0	0	0	0
111	3	0	0	0	0	0
112	3	0	0	0	0	0
113	3	0	0	0	0	0
114	3	0	0	0	0	0
115	3	0	0	0	0	0
116	4	0	0	0	0	0
117	4	0	0	1	0	0
118	4	0	0	1	0	0
119	5	0	0	1	0	0
120	5	0	0	1	0	0
121	5	0	0	2	0	0
122	6	0	1	2	0	0
123	6	0	1	2	0	0
124	6	0	1	3	0	0
125	7	0	2	3	0	0
126	7	0	2	4	0	0
127	7	0	3	4	0	0
128	8	0	3	5	0	0
129	8	0	4	5	0	1
130	9	1	5	6	0	1
131	9	1	6	7	0	2
132	10	2	6	7	0	2
133	10	3	7	8	0	3
134	11	4	8	9	1	4
135	11	6	9	10	3	5
136	12	7	10	10	4	6
137	13	9	11	11	6	7
138	13	10	12	12	8	8
139	14	11	13	13	9	10
140	14	12	14	14	11	11
141	15	13	15	15	12	12
142	16	15	16	16	14	13
143	16	16	16	16	15	15

TABLE III.

Page C.

HAZARD INDEX  
CORRESPONDING TO TRACER INDEX

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August 21st. to  
Time of Fresh Leaf Fall.

Tracer Index	Red Pine	White Pine	Jack Pine	Mixed Red Fast Dry-ing Site	& White Pine Slow Dry-ing Site	Mixed Red, White and Jack Pine.
Hazard Index						
95	0	0	0	0	0	0
100	1	0	0	0	0	0
105	2	0	0	0	0	0
110	3	0	0	0	0	0
111	3	0	0	0	0	0
112	3	0	0	0	0	0
113	3	0	0	0	0	0
114	3	0	0	0	0	0
115	3	0	0	0	0	0
116	4	0	0	0	0	0
117	4	0	0	0	0	0
118	4	0	0	0	0	0
119	4	0	0	0	0	0
120	5	0	0	0	0	0
121	5	0	0	0	0	0
122	5	0	0	0	0	0
123	6	0	0	0	0	0
124	6	0	1	0	0	0
125	6	0	1	0	0	0
126	7	0	1	0	0	0
127	7	0	2	1	0	0
128	7	0	2	1	0	0
129	8	0	3	2	0	0
130	8	1	4	3	0	1
131	9	1	5	4	0	1
132	9	2	6	5	0	1
133	10	3	7	6	0	2
134	10	4	8	7	0	3
135	11	5	8	8	1	3
136	11	6	9	9	2	4
137	12	8	10	10	4	6
138	12	9	11	11	6	7
139	13	10	12	12	8	8
140	13	11	13	13	10	10
141	14	12	14	14	11	11
142	14	14	15	15	13	12
143	15	15	16	16	15	14

TABLE 111.

Page D.

HAZARD INDEX  
CORRESPONDING TO TRACER INDEX.

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After Fresh Leaf Fall.

Tracer Index	Red Pine	White Pine	Jack Pine	Mixed Red Fast Dry-ing Site	& White Pine Slow Dry-ing Site	Mixed Red, White and Jack Pine.
Hazard Index.						
95	0	0	0	0	0	0
100	1	0	0	0	0	0
105	2	0	0	0	0	0
110	3	0	0	1	0	0
111	3	0	0	1	0	0
112	3	0	0	1	0	0
113	3	0	0	1	0	0
114	3	0	0	2	0	0
115	4	0	0	2	0	0
116	4	0	0	2	0	0
117	4	0	0	2	0	0
118	5	0	0	3	0	0
119	5	0	0	3	0	0
120	5	0	0	3	0	0
121	6	1	0	4	0	0
122	6	1	0	4	0	0
123	6	2	0	4	0	0
124	7	2	1	5	0	0
125	7	3	1	5	0	1
126	7	3	1	5	1	2
127	8	4	2	6	2	3
128	8	4	2	6	3	4
129	9	5	3	7	4	5
130	9	6	4	7	6	6
131	9	8	5	8	7	7
132	10	9	6	9	8	8
133	10	11	7	9	9	9
134	11	13	8	10	10	10
135	12	15	8	11	11	11
136	12	16	9	12	12	12
137	13	16	10	13	13	13
138	13		11	14	14	14
139	14		12	15	15	15
140	14		13	16	16	16
141	15		14			
142	15		15			
143	16		16			

TABLE IV.

## WIND CORRECTION.

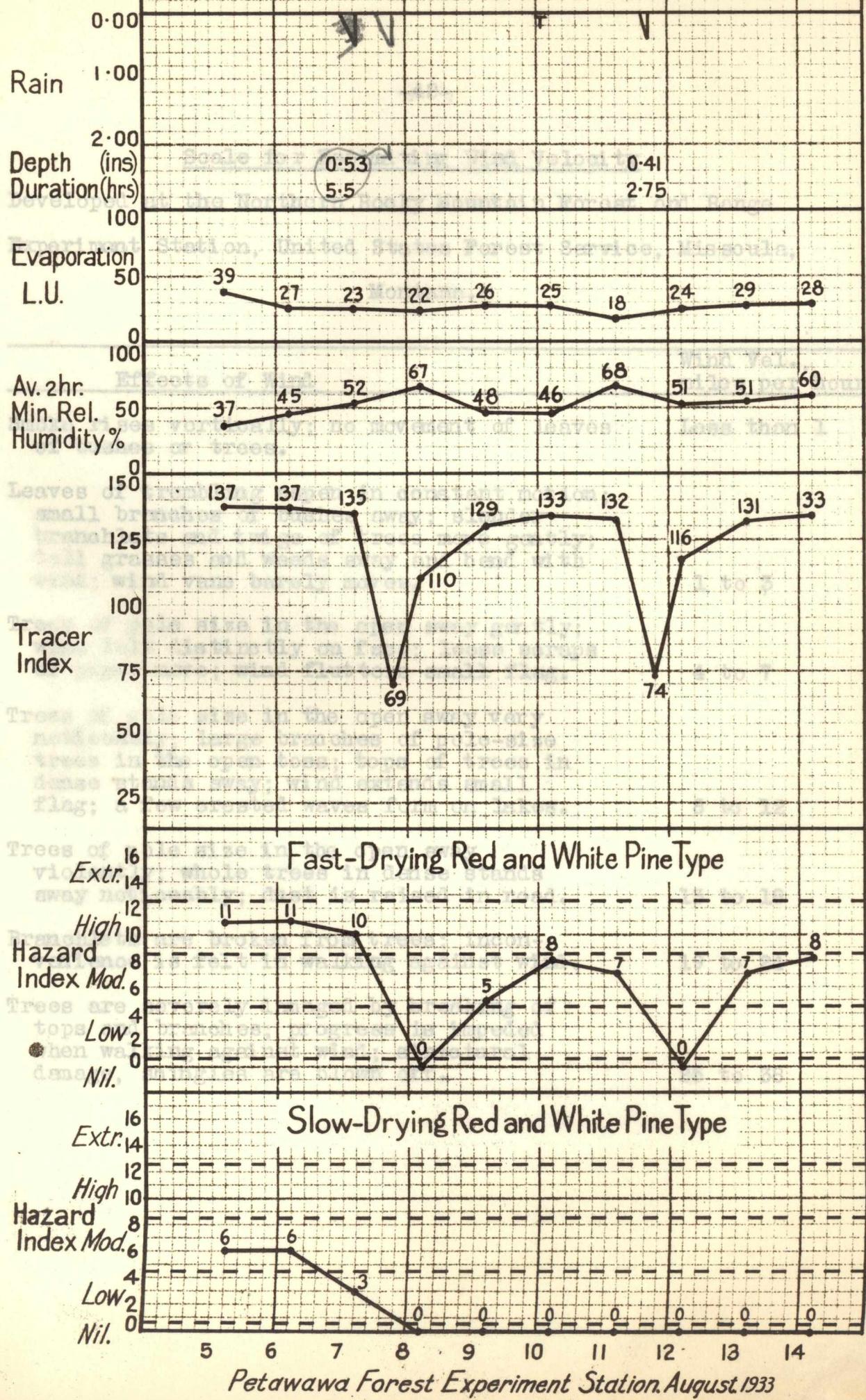
Wind Velocity Miles per Hour	Correction to Hazard Index (Table III).
0 to 3	- 1
4 to 12	0
13 to 18	+ 1
19 to 24	+ 2
25 or more	+ 3

## Note:

(1). Do not apply the correction for wind velocity 0 - 3 m.p.h. if the hazard index from Table III. is less than 2.

(2). When the hazard index from Table III., together with the wind correction, gives a value greater than 16, enter it on the chart as 16.

# SAMPLE FIRE HAZARD CHART



Scale for Estimating Wind Velocity

Developed at the Northern Rocky Mountain Forest and Range Experiment Station, United States Forest Service, Missoula, Montana.

Effects of Wind	Wind Vel., 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 away; slender branchlets and twigs of trees move gently; 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 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 pole-size 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 the 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
Trees are severely damaged by breaking of tops and branches; progress is impeded when walking against wind; structural damage, shingles are blown off.	25 to 38