A Publication of the National Wildfire Coordinating Group

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United States Department of the Interior

National Association of State Foresters



PMS 438-4 NFES 2184 Fire Behavior Worksheets for the HP-71B Calculator

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OUTPUT TABLES

			SHEET OF		
NAME OF FIRE		FIRE PREDICTION SPEC.			
DATE		TIME			
PROJ. PERIOD	DATE	DATE ———— PROJ. TIME FROM ———— TO —			
LIST NUMBER —					
TABLE NO	TABLE ITEM	ROW ITEM	COL. ITEM		
PROJECTION	POINT COLUM	N VALUES:			
ROW NO.	ROW VALUE		TABLE VALUES		
1.					
2.					
3.		-			
TABLE NO	TABLE ITEM	ROW ITEM	COL. ITEM		
PROJECTION	POINT COLUM	IN VALUES:			
ROW NO.	ROW VALUE		TABLE VALUES		
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2.					
3.					
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PROJECTION I	POINT COLU	IMN VALUES:	1 4" 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
ROW NO.	ROW VALUE		TABLE VALUES		
1.					
2.					
3.					

HP-71B FIRE BEHAVIOR PROGRAM STRUCTU...

	LEVEL 1	LEVEL 2	LEVEL 3
	FUEL MODEL		<u>MA</u> P
الا ماد داد	<u>DI</u> RECT	SIZE SCORCH MAP TWO	<u>CO</u> NTAIN
	<u>SI</u> ZE	<u>MA</u> P	
IAIN —	<u>CO</u> NTAIN		
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	<u>SC</u> ORCH		
	<u>IG</u> NITE		
	<u>MO</u> ISTURE		
	<u>MA</u> P		
-	<u>SL</u> OPE		
	<u>WI</u> ND		
	RELATIVE HUMI	DITY	
	<u>P</u> RINTER		
	QUIT		

OUTPUT TABLES

LIST NUMBER

OUTPUT TABLES

LIST NUMBER _____

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TABLE NO.	TABLE ITEM	ROW ITEM	COL. ITEM	TABLE NO.	TABLE ITEM	ROW ITEM	
PROJECTION	POINT COLUI	MN VALUES:		PROJECTION I	POINT COLU	IMN VALUES:	
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	TABLE ITEM			TABLE NO	TABLE ITEM	ROW ITEM	COL. ITEM
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3.		***************************************	7500 1	3.		**-	arcy S

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L	_	_	ç

MAP -WIND - TWO - SLOPE WORKSHEET

NAME	OF F	IRE	FIR	: E PREDICTION SI	PEC	Or	
DATE .			TIME	11/	1 15		
PROJ.	PER	IOD DAT		TIME FROM —			1 1
		(KEYWO	RDS; <u>I</u> NPUT <u>, L</u> IST, <u>R</u> UN,		IST NUM RCH, <u>M</u> A		
IN	PUT	(INPUT, LI					
			PROJECTION POINT FUEL MODEL NUMBER	(1-99)			
	1	MODEL#					
8	2	1H	1- H FUEL MOISTURE	[1-60%]			
	3	10H	10- H FUEL MOISTURE	[1-60%]			
99	4	100H	100 - H FUEL MOISTURE	[1-60%]			
	5	HERB	LIVE HERB MOISTURE	[30-300%]			
	6	WOOD	1 LIVE WOODY MOISTURE	[30-300%]			
	7	MFWS	MIDFLAME WINDSPEED	[0-99 MI/H]			
	8	SLP	SLOPE	[0-100%/ 0-45 DEGREES]	1		
	9	WDIR	DIRECTION OF WIND VECTOR, DEG. CLOCK- WISE FROM UPHILL	[0-360 DEGREES] -			
		PREDICT		(Y/N)			
	10	SDIR	DIRECTION OF SPREAD CALC.,DEG.CLOCKWISE FROM UPHILL OR FROM WIND VECTOR IF SLOPE	[0-360 DEGREES]			
9	UTP	UT (RUN)	IS ZERO).				
	0		NO MORE TABLES				
, e Acres	1	ROS	RATE OF SPREAD	CH/H			
	2	H/A	HEAT PER UNIT AREA	BTU/FT ²			
	3	FLI	FIRELINE INTENSITY	BTU/FT/S			
	4	FL	FLAME LENGTH	1 - (FT			
	5	RI _{.,} ,	REACTION INTENSITY	BTU/FT /MIN -			
	6	EWS	EFFECTIVE WINDSPEED IN DIRECTION SDIR	мин			
	7	MAXD	³ DIRECTION OF MAXIMUM SPREAD, DEG. CLOCK- WISE FROM UPHILL	DEGREES			

1 INPUT ONLY IF CORRESPONDING FUEL LOAD IS NOT ZERO.
2 INPUT ONLY IF MIDFLAME WINDSPEED (MFWS) AND SLOPE (SLP) ARE NOT ZERO.
3 OUTPUT ONLY IF CALCULATIONS ARE IN DIRECTION OF MAXIMUM SPREAD.

		MAP MODU	ILE			
	(KE	YWORDS: (INPUT, LIST, RUN, QUI	T) LIS	т нимві	ER	
INPUT	(INPUT, LIS	T)				
0		PROJECTION POINT				
1	SCL OPT	SCALE OPTION 1 - REPRESENTATIVE FRACTION 2 - INCHES PER MILE	(1 OR 2)		Matt II I	
2	RF/1000	1 REPRESENTATION FRACTION/1000 E.G., RF OF 1/24000=24	(1-500)			
3	IN/MI	2 INCHES PER MILE	(.0625-8)			
8	TIME	ELAPSED TIME	[.1-8H]			
OUTPL	<u>JT</u> (RUN)					
1	MFSD	FORWARD SPREAD DISTANCE ON MAP (UNITS OPT = 1 OR 3)	INCHES		I	
2	MBSD	BACKING SPREAD DISTANCE ON MAP (SIZE LINKED ONLY)	INCHES	-	1 - V	
3	MMXW	MAXIMUM FIRE WIDTH ON MAP (SIZE LINKED ONLY) 1 INPUT ONLY FOR SCALE OPTION = 1 2 INPUT ONLY FOR SCALE OPTION = 2	INCHES	SA,	-10°C 10	wn Yuan
		WIND ADJUSTMENT	MODULI	E	ı V	
		(KEYWORDS: INPUT, LIST, BI	UN, QUIT)			
INPU1	(INPUT, <u>L</u> IS		1111			
0		PROJECTION POINT				
1	20' W	20-FT WINDSPEED	[0 - 99 MV	н]		-
2	EXPOSURE	EXPOSURE TO WIND	(1-5)			_

INPUT (INPUT, <u>L</u> IST)		
0		PROJECTION POINT	
1	20' W	20-FT WINDSPEED	[0 - 99 MVH]
2	EXPOSURE	EXPOSURE TO WIND 1 = UNSHELTERED 2 = PARTIALLY SHELTERED 3 = FULLY SHELTERED, OPEN STAND. 4 = FULLY SHELTERED, CLOSED STAND. 5 = ENTER WIND ADJUST- MENT FACTOR	(1-5)
3	WAF	1 WIND ADJUSTMENT FACTOR	(0-1) decimal Velai
4	MODEL #	FUEL MODEL NUMBER	(1-99)
<u>OUTPUT</u>	(RUN)		
1	MFWS	MIDFLAME WINDSPEED	мин

¹ INPUT ONLY FOR EXPOSURE = 5.

²INPUT ONLY FOR EXPOSURE = 1.

FINE DEAD FUEL MOISTURE CALCULATIONS

	Α.	PROJECTION POINT				
	В.	DAY OR NIGHT (D/N)	D/N	D/N	D/N	D/N
DAY	TIME (CALCULATIONS				
	C.	DRY BULB TEMPERATURE, OF				
	D.	RELATIVE HUMIDITY, %				
	E.	REFERENCE FUEL MOISTURE, % (FROM TABLE A)				
	F.	MONTH	163.7.15			
	G.	UNSHADED OR SHADED (U/S)	U/S	U/S	U/S	U/S
	H.	TIME				
	l.	ELEVATION CHANGE	B/L/A	B/L/A	B/L/A	B/L/A
		B = 1000' - 2000' BELOW SITE L = ± 1000' OF SITE LOCATION A = 1000' - 2000' ABOVE SITE				
	J.	ASPECT				
	K.	SLOPE				
	L.	FUEL MOISTURE CORRECTION, % (FROM TABLE B, C, OR D)	7, 81			
	М.	FINE DEAD FUEL MOISTURE, % (LINE E + LINE 1)				
NIGH	ІТ ТІМІ	E CALCULATIONS				
	N.	DRY BULB TEMPERATURE, OF				
	Ο.	RELATIVE HUMIDITY, %		- yet 1 24 ³	Th I	
	P.	REFERENCE FUEL MOISTURE, % (FROM TABLE E)				
		USE TABLE F ONLY IF A STRONG INVERSION EXISTS AND A CORRECTION MUST BE MADE FOR ELEVATION OR ASPECT CHANGE.				
	Q.	ASPECT OF PROJECTION POINT		1	-	
	R.	ASPECT OF SITE LOCATION				
	S.	TIME				
	Т.	ELEVATION CHANGE B = 1000' - 2000' BELOW SITE L = ± 1000' OF SITE LOCATION A = 1000' - 2000' ABOVE SITE	B/L/A	B/L/A	B/L/A	B/L/A
	U.	CORRECTION FOR PROJECTION POINT LOCATION (FROM TABLE F)		w ₁ .		
	٧.	CORRECTION FOR SITE LOCATION (L) (FROM TABLE F)				
	W.	FUEL MOISTURE CORRECTION, % (LINE U - LINE V)		\Box		121.4991
	Χ.	FINE DEAD FUEL MOISTURE, % (LINE P + LINE W)				

TWO MODULE

PASSED	FROM DIREC	(KEYWORDS: INPUT, LIS CI (LIST)	11, HON, QUIT)	
0	MODEL1	PROJECTION POINT FIRST MODEL RUN BY DII	RECT	
2	MODEL2	SECOND MODEL RUN BY	DIRECT	
3	ROS1	SPREAD RATE FOR FIRST	T MODEL	
4	ROS2	SPREAD RATE FOR SECO	OND MODEL —	
INDIT (I	NPUT, <u>L</u> IST)			
5	COV1	PERCENT AREA COVERA FIRST MODEL	GE [20 - 80%]	
OUTPUT	(RUN)			
1	ROS	RATE OF SPREAD	СН/Н ———	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
		SLOPE MO	LIST	NUMBER
		FROM POINT		
INPL	<u>JT</u> ([NPUT,]		A	
111111	0	PROJECTION POINT		1 7/-1
	1 SCL O	PT SCALE OPTION	(1 OR 2)	
		1 = REPRESEN FRACTI	ON	
	2 RF/100	FRACTION/1000	(1-500)	Carry 19
	3 IN/MI	E.G., RF OF 1/24000 ² INCHES PER MILE NT CONTOUR INTERVA	(.0625 -	3 IN)
	4 CON IN	\$7.000 m	(.1 - 10	
	6 #INTV			
<u>ou</u>	TPUT (RUN)		ATEM TO STORE OF	is
	1 SLP %	SLOPE STEEPNESS		-W
	2 SLP DE		DEGREE FEET	5
	3 EL DIFI 4 HORIZ DIST		CE FEET	The state of
	וטוט	1 INPUT ONLY FOR SCALE OPT		
l		2 HUNUT OUR Y COR COAL C ORT	ion and a second	1.2.
. ļ			The 20 Marks of the property of the second o	MOVEMBER 1001

SCORCH MODULE

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РЯОЈЕСТІОИ РОІИТ

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		COLUMN VALUES:		TNIO41	нот стоя
	COL. ITEM	— мэті мон	M3TI 3J8AT .		TABLE NO.
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<u></u>	FEET ——— EPENDENTE.		ОИГА ІЕ ВСОВС	THOS TUANI'	Transcription
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37 -	T333	мімрѕреер		тное	TUGTUO

SCOBCH - MIND - STOPE- RH - WORKSHEET

SHEET

OE

FIRE PREDICTION SPEC.

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NAME OF FIRE

DIE

			9 "		
		DECHEES THE TOTAL	DIRECTION OF MAXIMUM SPREAD, DEG. CLOCK- WISE FROM UPHILL	GXAM	<i>L</i>
<u>.</u>	****	TOWN THIS TO S	EFFECTION SDIR	EMR	9
*		NIM\ [*] T¬I\UTB	REACTION INTENSITY	ıн	9
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		CHVH · · · · · · · · · · · · · · · · · ·	DETE OF SPREAD	ROS	L
		tropica i se	NO MORE TABLES		0
		** 4.**	CALC., DEG. CLOCKWISE FROM UPHILL OR FROM UPHILL OR FROM IS ZERO).	(NUA) IU	
		[0-360 DEGREES]	DIRECTION OF SPREAD	AIGS	10
i	3 -31500	(N/A)	VECTOR, DEG. CLOCK- WISE FROM UPHILL AT MAX	PREDICT	
		(0-360 DEGREES)	DIRECTION OF WIND	MDIR	6
		0-42 DEGREES 0-100%\	SLOPE	dлs	8
-		[НЛМ 66-0]	MIDFLAME WINDSPEED	MEMS	L
	F . F.Z. (£ 1	[%006-06]	LIVE WOODY MOISTURE	MOOD	9
	-	[%006-06]	LIVE HERB MOISTURE	невв	S
<u> </u>		[%09-1]	100 - H FUEL MOISTURE	100H	Þ
_	-	[%09-1]	10- H FUEL MOISTURE	HOL	3
		[%09-1]	1- H FUEL MOISTURE	нь	2
		(66-1)	FUEL MODEL NUMBER	WODEF #	L
			РЯОЈЕСТІОИ РОІИТ		0
			us	I (INPUT, LI	IndNI
	(OWI, 'AAA	дит, <u>si</u> ze, <u>sc</u> orch, <u>h</u>	оs; Дирит, <u>Дізт, В</u> им, <u>с</u>	(келмов	
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	— от -	J. TIME FROM	a di Santa de Caracteria de la companya de la comp La companya de la com	ITAG GOIF	ьвол. Реі

INPUT ONLY IF CORRESPONDING FUEL LOAD IS NOT ZERO. S INPUT ONLY IF MIDFLAME WINDSPEED (MFWS) AND SLOPE (SLP) ARE NOT ZERO. 2 OUTPUT ONLY IF CALCULATIONS ARE IN DIRECTION OF MAXIMUM SPREAD. 3

WIND ADJUSTMENT MODULE RH MODULE (KEYWORDS: INPUT, LIST, QUIT) (KEYWORDS: INPUT, LIST, RUN, QUIT) INPUT (INPUT, LIST) INPUT (INPUT, LIST) PROJECTION POINT 0 -----PROJECTION POINT 20-FT WINDSPEED [0 - 99 MVH] 20' W DRY BULB TEMPERATURE [33 - 120 F] DRYB EXPOSURE TO WIND (1-5)**EXPOSURE** 1 - EXPOSED [0-120 OF1 WET BULB TEMPERATURE WETB 2 - PARTIALLY SHELTERED 3 - FULLY SHELTERED. OPEN STAND. **ELEVATION** [0-12000 FT] 3 EL 4 - FULLY SHELTERED. CLOSED STAND. 5 - ENTER WIND ADJUST-MENT FACTOR OUTPUT (RUN) WIND ADJUSTMENT FACTOR (0-1) %RH RELATIVE HUMIDITY FUEL MODEL NUMBER (1 - 99)MODEL # DEWP **DEW POINT** OUTPUT (RUN) **ERROR CODES:** MEWS MIDFLAME WINDSPEED MI/H -888 = WET BULB TEMPERATURE GREATER THAN DRY BULB TEMPERATURE. 1 INPUT ONLY FOR EXPOSURE = 5. -999 = DEW POINT TOO COLD FOR VALID CALCULATIONS. 2INPUT ONLY FOR EXPUSURE = 1. SLOPE MODULE **OUTPUT TABLES** LIST NUMBER -LIST NUMBER ... (KEYWORDS: INPUT, LIST, RUN, QUIT) FROM POINT _____ TO POINT ____ TABLE NO. _____ TABLE ITEM ROW ITEM COL. ITEM INPUT (INPUT, LIST) PROJECTION POINTS ——— COLUMN VALUES: PROJECTION POINT SCALE OPTION (1 OR 2) SCL OPT 1 = REPRESENTATIVE ROW NO. **TABLE VALUES ROW VALUE** FRACTION 2 = INCHES PER MILE 1. REPRESENTATIVE (1-500)2. RF/1000 FRACTION/1000 E.G., RF OF 1/24000 = 24 2 INCHES PER MILE (.0625 - 8 IN) IN/MI (10-500 FT) CONTOUR INTERVAL CON INT MAP DISTANCE (.1 - 10 IN) MAP DIST (1-100) NUMBER OF CONTOUR # INTVLS INTERVALS MOBINOUS OUTPUT (RUN) PROJECTION POINT COLUMN VALUES: SLOPE STEEPNESS SLP %

THE CONTRACTOR OF THE CONTRACT

TABLE VALUES

ROW NO.

1.

2. 3. **ROW VALUE**

DEGREES

FEET

FEET

SLOPE STEEPNESS

ELEVATION CHANGE

HORIZONTAL DISTANCE

1 INPUT ONLY FOR SCALE OPTION = 1
2 INPUT ONLY FOR SCALE OPTION = 2

SLP DEG

FL DIFF

HORIZ

DIST

44.16

SPOT - MAP - IGNITE WORKSHEET

NAME (OF FIRE —		SHEET — FIRE PREDICTION SPEC. TIME ————————————————————————————————————	OF
	PERIOD DAT	E	PROJ. TIME FROM	то
		SPOT	MODULE	
		<u> </u>	LIST NUMBER	
	(KEYWORDS: INPUT, LIST, 9	CONTAIN, RUN, MAP, QUIT)	
INPUT	(INPUT, <u>L</u> IS	T)		
0		PROJECTION POINT		
1	BRAND SRC	FIREBRAND SOURCE	(1-3)	
		1 = TORCHING TREES 3 = \ 2 = BURNING PILES	NIND DRIVEN SURFACE FIRE	
2	MCHT	MEAN COVER HEIGHT	[0-300 FT]	
3	20'W	20-FT WINDSPEED	[0 - 99 MVH]	
4	RVEL	RIDGE - TO - VALLEY ELEVATION DIFFERENCE	[0-4000 FT]	
5	RVHD	RIDGE - TO - VALLEY HORIZONTAL DISTANCE	L [0-4 MI]	
6	SRC LOC	SPOTTING SOURCE LOCATION	(0-3)	
	96	0 - MIDSLOPE, WII SIDE 1 - VALLEY BOTTO	SIDE	ARD
7	TREE SP	1 TREE SPECIES	(1-6)	
	1 = ENGELMA 2 = DOUGLAS SUBALPIN			ti i i i i i i i i i i i i i i i i i i
8	DBH	1 TORCHING TREE DBH	[5 - 40 INCHES]	
9	TRHT	1 TORCHING TREE HEIGHT	[10-300 FT]	
10	#TR	1 NUMBER OF TORCHING TREES	[1-30]	
11	FLHT	² CONTINUOUS FLAME HEIGHT	[1-100 FT]	
12	FL	3 FLAME LENGTH	[.1 - 50 FT]	
13	MODEL #	3 FUEL MODEL	(1-99)	
14	HERB	HERBACEOUS MOISTURE	[30 - 300%]	er an comment of many con-
OUTPL	<mark>ìт (B</mark> nn) итн 10.	нститем 1	FABLE ITEM	.0P.3.)3///
.1	SPOT	MAXIMUM SPOTTING DISTANCE	IN MINUOS . TITLE	PHOROE !
	BalluA / B	1. 9A(JULIAN	90.710
	1 INPUT O	NLY FOR FIREBRAND SOURCE - 1 (TO	ORCHING TREE OPTION).	- f
	2 INPUT O	NLY FOR FIREBRAND SOURCE = 2 (BI	URNING PILE OPTION).	
	3 INPUT O	NLY FOR FIREBRAND SOURCE = 3 (W	/IND-DRIVEN SURFACE FIRE OPTION)	
per year	. 4 INPUT O	NLY FOR DYNAMIC FUEL MODELS WI	TH A HERBACEOUS FUEL LOAD.	

R/I	AP	M	OI	וח	II F
IVI	AF	IVI	U	υu	

			LI	ST NUMBER	
		(KEYWORDS:	(INPUT, LIST, RUN, QUIT)		
<u>INPUT</u> (NPUT, <u>L</u> IST)			
О		PROJECTION POINTS			
1	SCL OPT	SCALE OPTION 1 - REPRESENTATIVE FRACTION 2 - INCHES PER MILE	(1 OR 2)		
2	RF/1000	1 REPRESENTATION FRACTION/1000 E.G., RF OF 1/24000=24	(1-500)		
3	IN/MI	2 INCHES PER MILE	(.0625-8)		
4	UNITS OPT	UNITS OPTION		2	
6	SPOT	SPOT DISTANCE	[.1 - 10 MI]		
OUTPUT	(<u>R</u> UN)				
1	MSPT	FORWARD SPOT DISTAN ON MAP (UNITS OPT = 2	INCHES		
		00	T TABLES	LIST NUMBER	
TARLE	NO	TARLE ITEM	ROW ITEM	COL ITEM	i gr
TABLE	NO	TABLE ITEM	ROW ITEM	COL. ITEM	us pr
		TABLE ITEM TABLE ITEM T COLUMN \	200	COL. ITEM	- 1 pr
PROJECT ROW NO	———		/ALUES:	COL. ITEM	LOBIT
PROJEC	———	COLUMN \	/ALUES:		<u> </u>
PROJECT ROW NO.	———	OW VALUE	BAT CO + C.	LE VALUES	
PROJECT ROW NO.	o. RC	T COLUMN \	TAB	COL ITEM	5
PROJECT ROW NO. 1. 2. 3. TABLE	D. RC	T COLUMN \	TAB TAB TAB TAB TAB TAB TAB TAB	LE VALUES THI FIDO TENT HAM LUVININ COL. ITEM_	5
PROJECT ROW NO. 1. 2. 3. TABLE	NO.	T COLUMN \	BAT C + C	LE VALUES FILITION TERM SAM LEVEREN COL. ITEM COL. ITEM LEVEREN LEVER	5

IGNITE MODULE

(KEYWORDS: INPUT, LIST, BUN, QUIT)

NPUT (INPUT, LIS	ST)		
0		PROJECTION POINT		
1	TEMP	AMBIENT AIR TEMPERA	ATURE [33 - 120 ^O F]	
2	1H	1 - H FUEL MOISTURE	[1-60%]	
3	SHAD	SHADE	[0 - 100%]	
OUTPL	IT (RUN)			
1	P (I)	PROBABILITY OF IGNI	TION %	
				"
in the same of		OUTDU	IT TABLES	
		00170	I IADLES	LIST NUMBER
TAB	LE NO	TABLE ITEM	ROW ITEM	COL. ITEM
 PROJEC	TION POI		ALUES:	
	W NO.	ROW VALUE		TABLE VALUES
	1			.00.02
	3.	-24	7 (Q1 x 1792)	25163
TAE	BLE NO	TABLE ITEM	ROW ITEM	COL ITEM
PROJE	— — — ECTION PO	INT COLUMN VAL	LUES:	
RO	w no.	ROW VALUE	e i i	TABLE VALUES
	1. 2. 3.		tuters of the second of the second	With a military con-

FINE DEAD FUEL MOISTURE CALCULATIONS

A.	PROJECTION POINT				
В.	DAY OR NIGHT (D/N)	D/N	D/N	D/N	D/N
DAY TIME (CALCULATIONS				
C.	DRY BULB TEMPERATURE, OF				
D.	RELATIVE HUMIDITY, %				
E.	REFERENCE FUEL MOISTURE, % (FROM TABLE A)				7
F.	MONTH				
G.	UNSHADED OR SHADED (U/S)	U/S	U/S	U/S	U/S
Н.	TIME				
1.	ELEVATION CHANGE	B/L/A	B/L/A	B/L/A	B/L/A
	B = 1000' - 2000' BELOW SITE L = ± 1000' OF SITE LOCATION A = 1000' - 2000' ABOVE SITE				
J.	ASPECT		-		
ĸ.	SLOPE				
L.	FUEL MOISTURE CORRECTION, % (FROM TABLE B, C, OR D)				
м.	FINE DEAD FUEL MOISTURE, % (LINE E + LINE 1)				
	E CALCULATIONS		000 ⁽⁷⁷⁾	17.	
N.	DRY BULB TEMPERATURE, OF	- (4, 1)	413.5	710.	
О.	RELATIVE HUMIDITY, %		112. 1.		
P.	REFERENCE FUEL MOISTURE, % (FROM TABLE E)				
	FUH ELEVATION OF ASPECT CHANGE.	e de la como de la com	TO THE		
Q.	ASPECT OF PROJECTION POINT		: 120 TID		
R.	ASPECT OF SITE LOCATION				
S.	TIME STATE STATE	1()			1 446
т.	ELEVATION CHANGE B = 1000' - 2000' BELOW SITE L = + 1000' OF SITE LOCATION	B/L/A	B/L/A	B/L/A	B/L/A
115.13		31: 3197	M	.Oki	JART
U.	CORRECTION FOR PROJECTION POINT LOCATION (FROM TABLE F)				
٧.	CORRECTION FOR SITE LOCATION (L) (FROM TABLE F)	700	- 17	व व्यवस	2 [EC 17]22
w.	FUEL MOISTURE CORRECTION, % (LINE U - LINE V)				
x .	FINE DEAD FUEL MOISTURE, % (LINE P + LINE W)		17 + 1	NO	/EMBER 1991

			SIZE - WAP - CC	INTAIN
NAM DAT		F FIRE —		SHEET — OF — FIRE PREDICTION SPEC.
		ERIOD DA		PROJ. TIME FROM TO
			SIZE M	ODULE
				LIST NUMBER
			(KEYWORDS: INPUT, LIST, 100	ONTAIN, <u>R</u> UN, <u>MA</u> P, <u>Q</u> UIT)
INP		(INPUT, <u>L</u>	PROJECTION POINT	
	0			201411
	1		² RATE OF SPREAD	[.1-500 CH/H]
	2	EWS	² EFFECTIVE WINDSPEED	[0-99 MI/H]
	3	ET	³ ELAPSED TIME	[.1 - 8H] ———————————————————————————————————
<u>out</u>	PUT	(RUN)		
	0	NO MOR	RE TABLES	alaw ne ket i gri a taja ki d
	1	AREA	AREA	ACRES
	2	PER	PERIMETER	СН —————
	3	L/W	LENGTH-TO WIDTH RATIO	110- <u>110-110</u> <u></u>
	4	FSD	FORWARD SPREAD DISTAN	ICE CH
*	5	BSD	BACKING SPREAD DISTANC	DE CH
	6	MXW	MAXIMUM FIRE WIDTH	CH
		2 INPLIT O	N LINK TO CONTAIN ONLY IF L ONLY WHEN SIZE IS USED AS A IPUT WHEN LINKED FROM DIR	AN INDEPENDENT MODULE.
			OUTPUT T	TABLES
Α.	13.1	iii	Buy Buy BuyA	JIEWOLE, NO LUST, NUMBER
Т.	ABL	E NO	TABLE ITEM	ROW ITEMCOL. ITEM
PRO	DJEC	TION POI	NT — COLUMN VALUES	CONTRACTOR (SEEDINGSEE E)
RO	W N). F	ROW VALUE	TABLE VALUES
	1. 2.	i :-	0.00	

MAP MODULE

	LIST NUMBER	_
--	-------------	---

(KEYWORDS: ($\underline{\underline{\underline{\underline{I}}}}$ NPUT, $\underline{\underline{\underline{L}}}$ IST, $\underline{\underline{\underline{R}}}$ UN, $\underline{\underline{\underline{Q}}}$ UIT)

		, -				
INPUT (IN	IPUT, <u>L</u> IST)					
0		PROJECTION POINT				
1	SCL OPT	SCALE OPTION 1= REPRESENTATIVE FRACTION 2= INCHES PER MILE	(1 OR 2)	-		
2	RF/1000	¹ REPRESENTATION FRACTION/1000 E.G., RF OF 1/24000-24	(1-500)	-		
3	IN/MI	2 INCHES PER MILE	(.0625-8)			
4	UNITS OPT	UNITS OPTION 1 = SPREAD DISTANCE 2 = SPOTTING DISTANCE 3 = RATE OF SPREAD	(1-3)			
5	DIST	3 SPREAD DISTANCE	[0-1000 CH]			
6	SPOT	SPOTTING DISTANCE	[.1-10 MI]			
7	ROS	RATE OF SPREAD	[.1-500 CH/H]			
8	TIME	ELAPSED TIME 6	[.1-8H]			
5	FSD	FORWARD SPREAD DISTANCE	СН	U.T	77	
6	BSD	BACKING SPREAD DISTANCE	СН		1000	
7	MXW	MAXIMUM FIRE WIDTH	СН		-	
OUTPUT	(<u>R</u> UN)			J. 124,		
1	MFSD	FORWARD SPREAD DISTANCE ON MAP (UNITS OPT = 1 OR 3)	INCHES		- 1	-7
1	MSPT	SPOTTING DISTANCE ON MAP (UNITS OPT = 2)	INCHES		- t	
2	MBSD	BACKING SPREAD DISTANCE ON MAP (SIZE LINKED ONLY)	INCHES -	500 Oc. 10 Sec.		
3	MMXW	MAXIMUM FIRE WIDTH ON	INCHES _	Hen y		
ME	n cot. n	MAP (SIZEILINKED ONLY) M	TABLE ITE		BLENC.	AT
1 INPU	IT ONLY FOR SO	CALE OPTION = 1.				
		DALE OPTION = 2. — CHULAN M	MUJUD	114109	непозн	FROL
2		NITS OPTION = 1.				
4 :-	JULY VALUE		N VALUE	Oh	OH Wr	Hi
5 INPU	T ONLY FOR U	NITS OPTION = 3.				
		FOR LINKED RUN ONLY. NO INPUT IS NE	EDED		- 1.42	
PASS	SED FROM SIZE	FOR LINKED HON ONLT. NO INPUT IS NE	EUEU.			

CONTAIN MODULE

200	(KEYWORDS: INPUT, LIST, BUN, QUIT)		CONTRIBUTOR
	BUN, QUIT)	LIST NUMBER	

	INPUT ONLY FOR RUN OPTION • 2 (CALCULATE BURNED AREA TARGET).	3 INPL
ω.	2 INPUT ONLY FOR RUN OPTION - 1 (CALCULATE TOTAL LINE BUILDING RATE).	2 INPL
2 .1	INPUT ONLY WHEN CONTAIN IS USED AS AN INDEPENDENT MODULE.	1 INPU
ROW NO. ROW	LINE BUILDING RATE TOO FAST, RECEIVED AND THE PROPERTY OF THE	.5.4 II II
	L/W RATIO TOO LARGET TOO CLOSE TO INITIAL FIRE SIZE.	<u>.</u> ω
PROJECTION POINT	OO SLOW TO CATCH FIRE.	-2 =
TABLE NO	BURNED AREA TARGET TOO LARGE, CANNOT CALCULATE SLOW	<u>:</u> .
	5 MINA "MINIMUM AREA" ACRES ERROR CODES: CALCULABLE	5 ERROR
	MAXA MAXIMUM AREA ACRES CALCULABLE	4
ω ρ	TLBR TOTAL LINE BUILDING CH/H RATE	ω
1	FINAL FIRE SIZE ACRES	ω
ROW NO. ROW V	TIME CONTAINMENT TIME HOURS	2
PROJECTION POINT	PER TOTAL LENGTH OF LINE CHAINS PF	
TABLE NO.	OUTPUT (BUN)	OUTPU
	TLBR TOTAL LINE BUILDING [.1-800 CH/H]	7 .
	BAT BURNED AREA TARGET [.1-2000 ACRES]	6
	LENGTH -TO-WIDTH RATIO [1-5]	5
	AREA INITIAL FIRE AREA [.1-100 ACRES]	4
ω p :	ROS ¹ RATE OF SPREAD [.1-500 CH/H]	ω
HOW NO. HOW V	ATTACK ATTACK OPTION (1 OR 2) OPT 1 = HEAD 2 = REAR	2
PROJECTION POINT	AREA P	
TABLE NO	(1 OH 2)	_
	PROJECTION POINT	0 -
	(INPUT, LIST) (KEYWORDS: INPUT, LIST, BUN, QUIT)	INPUT (I

4 OUTPUT ONLY FOR RUN OPTION = 2.

5 OUTPUT ONLY FOR RUN OPTION = 1.

OUTPUT TABLES

		LIST NUMBER	MBER
TABLE NO.	TABLE ITEM	ROW ITEM	COL ITEM
PROJECTION POINT	OINT COLUMN VALUES:	ALUES:	
ROW NO.	ROW VALUE	7	TABLE VALUES
ω γ , 			
		- 4	
TABLE NO	TABLE ITEM	ROW ITEM_	COL ITEM
ROJECTION POINT	OINT COLUMN VALUES:	VALUES:	
ROW NO.	ROW VALUE		TABLE VALUES
, ko 🕇			
	Market a series		
	10 de 120 de	% 1: BA	
TABLE NO	TABLE ITEM	BOW ITEM	COL ITEM
PROJECTION POINT	17.19	COLUMN VALUES: 111 PERA 103	ToAl of a
ROW NO.	ROW VALUE	1 4 55 5 44 5 F. M. D. Well 1 5 Well 14 5 Well	TABLE VÁLUES
ω γν - +	200	100 100 100 100 100 100 100 100 100 100	31.1.7.0
!			

		MOISTURE			22	14T	BURN DAY 1400 TEMPERATURE	[33-120 oF]
NAME C	OF FIRE	FIRE PREDICTION	ON SPEC		23	14RH	BURN DAY 1400 RELATIVE HUMIDITY	[1-100%]
DATE .		TIME			24	14W	BURN DAY 1400 20-FT WINDSPEED	[0-99 MVH]
PRO.I	PERIOD DATE	PROJ. TIME FRO	DM.	TO	25	14CC	BURN DAY CLOUD COVER	[0-100%] ——— ———
11100.1	Elliop DATE ——				26	14HZ	BURN DAY 1400 HAZINESS	[1-4]
	(KI	MOISTURE MODULE EYWORDS: INPUT, LIST, BUN, QI					1 = VERY CLEAR SKY 2 = AVERAGE CLEAR FOREST ATMOS	PHERE
<u>INPUT</u>	(<u>I</u> NPUT, <u>L</u> IST)	т топро. Im от, Бот, Пон, Ж.	011 /				3 = MODERATE BLUE HAZE 4 = DENSE HAZE-MODERATE SMOKE	
0		PROJECTION POINT			CUNCETWE	ATUED		
1	RUN OPT	RUN OPTION 1 - BURN TIME CALCULATIONS	(1 OR 2)		SUNSET WE	SST	SUNSET TEMPERATURE	[33-120 ^o F]
TIME AND	LOCATION	2 - HOURLY CALCULATIONS			28	SSHR	SUNSET RELATIVE HUMIDITY	[1-100%]
2	BURN MONTH	MONTH OF BURN	(1-12)		29	SSW	SUNSET 20-FT WINDSPEED	[0-99 MI/H]
3	BURN DAY	DAY OF BURN	(1-31)		30	SSCC	SUNSET CLOUD COVER	[0-100%]
4	LATITUDE	LATITUDE OF FIRE	(-90 TO		SUNRISE WI	EATHER		
			90 DEGREES)		31	SRT	SUNRISE TEMPERATURE	[33-120 ⁰ F]
5	BURN TIME	TIME OF BURN	(0-2359 H)		32	SRRH	SUNRISE RELATIVE HUMIDITY	[1-100%]
FUEL MO	DEL				33	SRW	SUNRISE 20-FT WINDSPEED	[0-99 MVH]
6	MODEL #	FUEL MODEL NUMBER	(1-99)	1 5 Tab	34	SRCC	SUNRISE CLOUD COVER	[0-100%]
SLOPE, E	LEVATION, ASPECT		-		BURN TIME	WEATHER	711 1 19 ₆	The the spiral sec
11	SLP	SLOPE STEEPNESS	[0-100%/ 0-45 DEGREES]		35	BTT	BURN TIME TEMPERATURE	[33-120 F]
12	ELFL	ELEVATION OF FIRE LOCATION	[0-12000 FT]		36	BTRH	BURN TIME RELATIVE HUMIDITY	[1-100%]
	RH OBS AT FIRE		(Y/N)		37	BTW	BURN TIME 20-FT WINDSPEED	[0-99 MVH]
13	ELOB	ELEVATION OF T&RH OBSERVATIONS	(0-12000 FT)		38	втсс	BURN TIME CLOUD COVER	[0-100%]
14	ASPECT	ASPECT OF FIRE LOCATION	(0-360 DEGREES)		39	втнг	BURN TIME HAZINESS	[1:4]
-	700 E01	-0 = NORTH 180 = SOUTH	(0-300 DEG/1220)		-		1 - VERY CLEAR SKY	
		90 = EAST 270 = WEST	Fr. Shaziv Withold I depot has egu mene	ACTIVITY WITH COMMUNICATION AND CONTRACTOR			2 = AVERAGE CLEAR FOREST ATM 3 = MODERATE BLUE HAZE	
	OVERSTORY DESCRIPTION	N					4 = DENSE HAZE-MODERATE SMO	- ,
15	"CCLOTO"	CHOWN CLOSURE	[0-100%]	Naieno	FUEL LEVEL	WIND ADJUSTM	EXPOSURE OF FUELS TO WIND AN OUT	NEAL ARTHURS INFO LAST
16	FOLIAGE	FOLIAGE PRESENCE	(0 OR 1)		40	EXPOSURE	EXPOSURE OF FUELS TO WIND AN ONLY	ENOUGHT NE BUILD
		OOLUMN VALUES TRASBRE 1) L17(C	- GUECTION PI			- I I = UNSHEL PEREDVO 10 COLO	TIAN SUBSECT AUCE C
17	LABLE MACHE	U = INTOLEHANT	(0,0R 1) W.				2 - PARTIALLY SHELTERED 3 - FULLY SHELTERED - OREN 5 - STAND 4 - FULLY SHELTERED - OLOSED	A = BURNEU APEA TARE A = BURNEU PINC RATE
18	DOM TYPE	1 - TOLERANT DOMINANT TREE TYPE 1 - CONIFEROUS	(1 OR 2)		_		STAND 5 - DIRECT ENTRY OF WIND ADJUSTMENT FACTOR	
- 8		2 - DECIDUOUS		e i	41	WAF	WIND ADJUSTMENT FACTOR	(0-1) -3 -5 -3 -7 - 10 M
19	AVTH	AVERAGE TREE HEIGHT	[10-300 FT]				EXPOSURE 5 ONLY	erittrianam
20	H/H	CROWN HEIGHT/TREE HEIGHT RATIO	[.1-1]					O - c c c c c c c c c c c c c c c c c c
14.dr. 21	::,: <u>H</u> /D	CROWN HEIGHT/CROWN DIAMETER RATIO	[.2-5]	<u> </u>	1			NOVEMBER 196
					•			

MOISTU	RE INITIALIZATION	OPTION		
43	MOIS OPT	MOISTURE INITIALIZATION OPTION	(1-5)	_
		1 = FINE FUEL MOISTURE KNOWN FOR DAY BEFORE BURN 2 = NOT ALLOWED 3 = INCOMPLETE DATA; RAIN THE WEEK BEFORE BURN, 4 = INCOMPLETE DATA; NO RAIN THE WE BEFORE BURN 5 = INCOMPLETE DATA; WEATHER PATTERN CHANGING.	EK	
MOISTU	RE OPTION 1			
44	FM-1	BURN DAY -1 FINE FUEL MOISTURE	[1 -100%]	
MOISTU	RE OPTION 3			
51	RDAY	NUMBER OF DAYS BEFORE BURN RAIN OCCURRED	[1-7 DAYS]	
52	RAIN	RAIN AMOUNT, HUNDREDTHS OF AN INCH	[0-400]	—
53	RDT	1400 TEMPERATURE ON RAIN DAY	[33 - 120 °F]	·
54	SKY CODE	SKY CONDITION FROM RAIN DAY - BURN DAY	[1-3]	
		1 - CLEAR 2 - CLOUDY 3 - PARTLY CLOUDY		_
MOISTU	IRE OPTION 4		, 175°, 17 E	
		NO ADDITIONAL INPUT		
MOIST	JRE OPTION 5		1740/21 1	-
55	TD - 1	BURN DAY - 1 1400 TEMPERATURE	[33 - 120°F]	
56	RD · 1	BURN DAY - 1 1400 RELATIVE HUMIDITY	[1-100%]	
57	WD - 1	BURN DAY - 1 1400 20 FT WINDSPEED	[0-99]	
58	CD - 1	BURN DAY - 1 1400 CLOUD COVER	[0=100%]	
59	WTHR	WEATHER CONDITION PRIOR TO BURN DAY - 1	[1-3] 15	
ОИТРИ	T (RUN)	1 - HOT AND DRY 2 - COOL AND WET 3 - BETWEEN 1 AND 2	CIE. W. Same	
1	MOIS	1 - HOUR FUEL MOISTURE	TALLIANT	
2	TEMP		°F	
3	%RH	FUEL LEVEL RELATIVE HUMIDITY		
4	SHAD	PERCENT OF AREA SHADED	%	
5	P(I)	PROBABILITY OF IGNITION	% * 11)(·	

HOURLY OUTPUT (RUN) TIME	FMOIST %	FTEMP ° F	FRH %
14			
15			
16		90.	
17			
18			R L L
19		30 m	
20	Marie .		
21	31		la y
22			
23			
24		,	
1		dana da	-
2		*4.1. ******	* (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
3	- Visit		
2904A 4 37977		<u> </u>	
5	+ ***	<u> </u>	· ·
6			*
7			
(G. \$ and	Manwer	MITTER BINAT	11 11 18 1T
9	CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR	-11	Sec. 1. (1990) 1890 1891 1991
10	THE WAY DEED IN		HOLLOS IND
39(4) 4 4 5 T		नाराहर स्ट्रान	OH WOIL
12)	× 10
-	1= 00		
BURN TIME			NOVEMBER 1001

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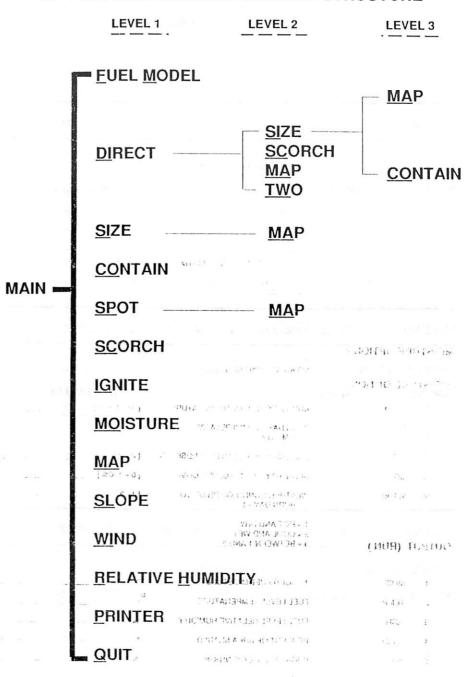
OUTPUT TABLES

			SHEET OF			
NAME OF FIRE	E	TIME TIME				
		PROJ. TIME FROM ————————————————————————————————————				
		LIST NUMBER —				
TABLE NO	TABLE ITEM	ROW ITEM	COL. ITEM			
PROJECTION	POINT COLUM	N VALUES:				
ROW NO.	ROW VALUE		TABLE VALUES			
1.						
2.						
3.			_			
	TABLE ITEM POINT COLUM		COL ITEM			
ROW NO.	ROW VALUE		TABLE VALUES			
1,						
2.						
3.						
TABLE NO			COL. ÎTEM			
PROJECTION	POINT COLU	MN VALUES:	¥ 1			
	ROW VALUE	C 384 X 934 1M3 1M3	TABLE VALUES			
1						
2.						
3.	**		¥			
	50 90 1 00		Gar, en 🖡			

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TREE REPORTS

HP-71B FIRE BEHAVIOR PROGRAM STRUCT...



OUTPUT TABLES

LIST NUMBER -

OUTPUT TABLES

LIST NUMBER _____

-				S BERNESSEE STORE					-
TABLE NO.	TABLE ITEM	ROW ITEM	COL. ITEM	TABLE NO.	TABLE ITEM		ROW ITEM	COL. I	TEM
PROJECTION	POINT COL	LUMN VALUES:		- PROJECTION	POINT	COLUMN V	ALUES:		
ROW NO.	ROW VALUE		TABLE VALUES	ROW NO.	ROW VALUE			TABLE \	VALUES
1.				1.					
2.	01.100	_		2.			1 - 18 1 185		
3.			8.77	3.	X		****		
		* 'AT 'AT							
TABLE NO.	TABLE: ITEM	ROW ITEM	COL. ITEM	TABLE NO.	TABLE ITEM	7,430 1,10	ROW ITEM	COL. I	TEM
PROJECTION	POINT CO	LUMN VALUES:	COLUMN TO THE PARTY OF THE PART	_ PROJECTION	POINT	COLUMN V	/ALUES: q	4010.10	
ROW NO.	ROW VALUE	THE STATE OF THE LAND	TABLE VALUES	ROW NO.	ROW VALUE	34		TABLE	VALUES
1.			3	_ 1.		74, Ch. 786	inglika ja	Hd.,) ; ; ; ; 	
2.		<u>La range neggi</u>	7 THE RESERVE	_ 2.			ROBERCO C Formation	W Carrie	
3.		rate street		3.	A			10 at 12' S'	in the
- 1	and the second	rate of conflict t	i priw 26	47 - 12 A			51.1414		(1)
	(8 - 1	(7:				11:17:	City be (St.	10.11.71	8: n
TABLE NO.	TABLE ITEM	BOW ITEM	COL. ITEM	TABLE NO.	TABLE ITEM	54.58		;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	ITEM —E—
BBO JECTION	POINT CO	(-1/4/6 (1) 3/4/1) (-1/4/6 (1) 3/4/1)		PROJECTION	N POINT	COLUMNI		122511	4 11
		FOR WITH MISSION C	1/4	5 59	N POINT	IM TOTAL			3 1 NALVEO
ROW NO.	ROW VALUÉ 1/	MODEL NEMBELT		ROW NO.	ROW VALUE	# 1.11M	detailes in	JORIGH	VALUES,
2.			Chilent all the	2. 3.	22 12 2 2	1.1- 10	DEG CLECK	J. 100	· χ Δ ξ φ
3.				J.	***************************************		3		
		1. 02F +	127		147	·. 4.05)	, is a particular to	ADD AND	in the
		to disease.	(t) (1) (t)	3 ■ 343	THE STATE OF THE PARTY.	i in	THE SOME PARTY.	ALL MARKETS	NOVE

1 INPUT ONLY IF CORRESPONDING FUEL LOAD IS NOT ZERO.
2 INPUT ONLY IF MIDFLAME WINDSPEED (MFWS) AND SLOPE (SLP) ARE NOT ZERO. THE HEAR MORE OUTPUT ONLY IF CALCULATIONS ARE IN DIRECTION OF MAXIMUM SPREAD.

DEGREES

IN DIRECTION SDIR DIRECTION OF MAXIMUM

SPREAD, DEG. CLOCK-WISE FROM UPHILL

MAXD

M	Δ	P	M	0	D	H	1	F
			IAI	V	\mathbf{L}	u	_	_

	(KI	EYWORDS: (INPUT, LIST, RUN, QU	IT)	
INPUT	(INPUT, LIS		IT) LIST NUMI	3ER
0		PROJECTION POINT		
1	SCL OPT	SCALE OPTION 1 - REPRESENTATIVE FRACTION 2 - INCHES PER MILE	(1 OR 2)	
2	RF/1000	REPRESENTATION FRACTION/1000 E.G., RF OF 1/24000=24	(1-500)	_
3	IN/MI	2 INCHES PER MILE	(.0625-8)	
8	TIME	ELAPSED TIME	[.1-8H]	
OUTPU	IT (RUN)			
1	MFSD	FORWARD SPREAD DISTANCE ON MAP (UNITS OPT = 1 OR 3)	INCHES	
2	MBSD	BACKING SPREAD DISTANCE ON MAP (SIZE LINKED ONLY)	INCHES	no to the second
-3	MMXW	MAXIMUM FIRE WIDTH ON MAP (SIZE LINKED ONLY) 1 INPUT ONLY FOR SCALE OPTION = 1 2 INPUT ONLY FOR SCALE OPTION = 2	INCHES 1. 1	# 102 On a
	amuav -	WIND ADJUSTMENT	MODULE	1 - 1,

(KEYWORDS: INPUT, LIST, BUN, QUIT)

INPUT (INPUT, LIST)

0		PROJECTION POINT	
1	20' W	20-FT WINDSPEED	[0 - 99 MVH]
2	EXPOSURE	EXPOSURE TO WIND 1 = UNSHELTERED 2 = PARTIALLY SHELTERED	(1-5)
- 1 Pastia (10 ton)	COL 11E 1	4 = FULLY SHELTERED,	TAMBER
		CLOSED STAND. 5 = ENTER WIND ADJUST	PROJECTION POINT
3	APPE VAL SAW	WIND ADJUSTMENT FACTOR	(0-t) 1/2/ WOR
4	MODEL #	FUEL MODEL NUMBER	(1-99)
OUTPUT	(RUN)		
1	MFWS	MIDFLAME WINDSPEED	мин

INPUT ONLY FOR EXPOSURE = 5.

2INPUT ONLY FOR EXPOSURE = 1.

FINE DEAD FUEL MOISTURE CALCULATIONS

	A.	PROJECTION POINT					
	В.	DAY OR NIGHT (D/N)	D/N	D/N	D/N	D/N	
AY		CALCULATIONS					
	C.	DRY BULB TEMPERATURE, OF					
	D.	RELATIVE HUMIDITY, %					
	E.	REFERENCE FUEL MOISTURE, % (FROM TABLE A)					
	F.	MONTH					
	G.	UNSHADED OR SHADED (U/S)	U/S	U/S	u/s	u/s	
	н.	TIME					
	l.	ELEVATION CHANGE	B/L/A	B/L/A	B/L/A	B/L/A	
		B = 1000' - 2000' BELOW SITE L = ± 1000' OF SITE LOCATION A = 1000' - 2000' ABOVE SITE					
	J.	ASPECT					
	K.	SLOPE					
	L.	FUEL MOISTURE CORRECTION, % (FROM TABLE B, C, OR D)					
	М.	FINE DEAD FUEL MOISTURE, % (LINE E + LINE 1)					
IGI	A ***	E CALCULATIONS		U. ~	a con	remain on the	
	N.	DAT BOLD TEMPERATURE, T					
	0.	RELATIVE HUMIDITY, %				-	
	P.	REFERENCE FUEL MOISTURE, % (FROM TABLE E)		k*_ + 1		1	- 1
		USE TABLE FONLY IF A STRONG INVERSION EXISTS AND A CORRECTION MUST BE MADE FOR ELEVATION OR ASPECT CHANGE.			T	9031 3 HF .	O
	Q.	ASPECT OF PROJECTION POINT					
	R.	ASPECT OF SITE LOCATION				-	
	S.	TIME					
	T.	ELEVATION CHANGE B = 1000' - 2000' BELOW SITE	B/L/A	B/L/A	B/L/A	B/L/A	
		L=± 1000 OF SITE LOCATION A = 1000 - 2000 ABOVE SITE		Marin du	LAY,		. 1
	U.	CORRECTION FOR PROJECTION POINT LOCATION (FROM TABLE F)					:3:
	V.	CORRECTION FOR SITE LOCATION (L) (FROM TABLE F)	1040 107				3
	W.	FUEL MOISTURE CORRECTION, % (LINE U - LINE V)					- F
	X.	FINE DEAD FUEL MOISTURE, % (LINE P + LINE W)					

			TWO	MODUL	E			
		(KE	YWORDS: INP			1)		
PASSED	FROM DIRE							
0		PRO	JECTION POIN	Т				
1	MODEL1		T MODEL RUN		СТ			
2	MODEL2	SECO	OND MODEL R	UN BY DII	RECT			
			EAD RATE FOR					
3	ROS1							
4	ROS2	SPRE	EAD RATE FOR	RSECON	MODEL			
INPUT (I	NPUT, LIST)							
5	COV1	PER	CENT AREA CO		[20 - 80%	1		
OUTPUT	(RUN)							
1	ROS	RATE	OF SPREAD	50	CH/H			
1	ROS	RATE	OF SPREAD	- 'y		6.5		
1	ROS		SLOP	E MOE	DULE	LIST N	UMBER	
1	ROS			E MOE	DULE	LIST N	UMBER	
1	ROS	(K	SLOP	E MOD	DULE T, RUN, Q	LIST N	UMBER	
	ROS	(K FR LIST)	SLOP EYWORDS: IN	E MOE	DULE T, BUN, QU	LIST NO DIT) (2): (2): (2): (2): (3): (4): (4): (5): (4): (7): (7): (7): (7): (7): (7): (7): (7		ny.
	<u>)</u> ([NPUT,] 0	(K FR LIST) F	SLOP EYWORDS: IN OM POINT	E MOL	DULE T, BUN, QL	LIST N	1.80	450
	Į (ĮNPUT, Į	(K FR LIST) F	EYWORDS: IN OM POINT PROJECTION P SCALE OPTIC 1 = REPF	E MOL	POINT _	LIST N	1.80	nt.
	<u>)</u> ([NPUT,] 0	(K FR LIST) F	EYWORDS: IN OM POINT PROJECTION P SCALE OPTIC 1 = REPE	E MOL	DULE T, BUN, QL D POINT	LIST N	130 · · · · · · · · · · · · · · · · · · ·	Tr.
	<u>)</u> ([NPUT,] 0	(K FR LIST) P PPT	EYWORDS: IN OM POINT PROJECTION P SCALE OPTIO 1 = REPP 2 = INCH REPRESENTA FRACTIO	E MOE IPUT, LIS TO OINT ORESENTAT RACTION ATIVE N/1000	DULE T, BUN, QU POINT	LIST N UIT)	130 · · · · · · · · · · · · · · · · · · ·	TY CALL
	JI ([NPUT,] 0 1 SCL O 2 RF/100	(K FR LIST) P PPT	EYWORDS: IN OM POINT PROJECTION P SCALE OPTIO 1 = REPP 2 = INCH REPRESENT/ FRACTIO E.G., RF OF 1	E MOE IPUT, LIS TO OINT ON RESENTAT RACTION ES PER MATIVE N/1000 /24000 = 2	DULE T, BUN, QU POINT	LIST NO. 12.10 (*1 OR 2) (*1.4 500)	the second	
	JI ([NPUT,] 0 1 SCL O	(K FR LIST) POPT	EYWORDS: IN OM POINT PROJECTION P SCALE OPTIO 1 = REPP 2 = INCH REPRESENTA FRACTIO	E MOE IPUT, LIS TO COINT ON RESENTATION ES PER MATIVE N/1000 //24000 = 2 MILE	DULE T, BUN, QU POINT	LIST N UIT)	1,000 2,000 1,000	
	Į (ĮNPUT, Į	(K FR LIST)	SLOP EYWORDS: IN OM POINT	E MOL	DULE T, BUN, QL	LIST N	1.80	n:
	UI ([NPUT,] 0 1 SCL O 2 RF/100 3 IN/MI	(K FR LIST) PDPT	EYWORDS: IN PROJECTION P SCALE OPTIO 1 = REPP 2 = INCH REPRESENTA FRACTIO E.G., RF OF 1	E MOE IPUT, LIST TO POINT RESENTATION ES PER MATIVE N/1000 /24000 = 2 MILE TERVAL	DULE T, BUN, QU POINT	LIST N UIT)	N) 17	

OUTPUT (RUN)

PU	I (RUN)	-	. in.	032 remme 2-11		1713	*
	SLP %		EEPNESS	9/	6		_
2	SLP DEG			Further (Child		ery Ata	Y
		FI FILATIO	ALCITA NICE	- · · · · · · · · · · · · · · · · · · ·	THE PARTY OF THE P		

3 EL DIFF ELEVATION CHANGE AND DESCRIPTION OF THE STATE O DIST

INTERVALS'

¹ INPUT ONLY, FOR SCALE OPTION = 1 INPUT ONLY FOR SCALE OPTION = 2

T - SCORCH - WIND - SLOPE- RH - WORKSHEET

IAME OF FI	RE	FIF	RE PREDICTION SPEC.		
ATE		TIN	1E		
PROJ. PERIO		DIREC	OJ. TIME FROM F MODULE LIST I, QUIT, <u>SI</u> ZE, <u>SC</u> ORCH,	TO NUMBER MAP, IWO)	
INDUT /	INPUT, LIS				
0		PROJECTION POINT			
1 N	MODEL#	FUEL MODEL NUMBER	(1-99)		
2 1	Н	1- H FUEL MOISTURE	[1-60%]		
3 1	0H 1	10- H FUEL MOISTURE	[1-60%]		
4 1	00H 1	100 - H FUEL MOISTURE	[1-60%]		_
5 H	HERB 1	LIVE HERB MOISTURE	[30-300%]		1016151
6 V	WOOD 1	LIVE WOODY MOISTURE	[30-300%]		
7 N	MFWS I	MIDFLAME WINDSPEED	[0-99 MI/H]		_
8 5	SLP	SLOPE	[0-100%/ 0-45 DEGREES]		
9 V		DIRECTION OF WIND VECTOR, DEG. CLOCK- WISE FROM UPHILL	[0-360 DEGREES]		
F	PREDICT AT	MAX . Inch.	(Y/N) 14(0.301.64, 0.10		
10 5		DIRECTION OF SPREAD CALC.,DEG.CLOCKWISE FROM UPHILL OR FROM WIND VECTOR IF SLOPE	HOMS IN	Tio ar	1 1 2 1 4 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5
OUTPU'	I (RUN)	NO MORE TABLES	DIT THE		
1 1	ROS (*	RATE OF SPREAD	К.ш., З°Н - S / Сн/н - ? ЗнSЭ П	— 0 001-11.	
2 1	H/A	HEAT PER UNIT AREA	O SOLOAPIA		
4	FLI (44:8-		BTU/FT/S 115M	1900	4,
	1 1 1 1 1	FLAME LENGTH	CONTOUR PARTAMENTAL PROPERTY	CHINI DAMES	-
	- (0	REACTION INTENSITY	OT ACC TO PERMAULI	2 White	9
	RI EWS	EFFECTIVE WINDSPEE	~		h
ь	LAND	IN DIRECTION SDIR	SHEELING STOP WE	— 개발)) 라 Li2	x 11.95
7 1	EN DXAM	DIRECTION OF MAXIMU SPREAD, DEG. CLOCK- WISE FROM UPHILL	M 3 DEGREES BY	170 13	* y
1	NOUT ON Y	VIE CODDESDONDING E	HELLOAD IS NOT ZEDO		

SCORCH MODULE

(KEYWORDS: (INPUT, LIST, RUN, QUIT)

INPUT (II	NPUT, <u>L</u> IS	ST)					
0		PROJECTION P	POINT				
1	TEMP	AMBIENT AIR T	EMPERATURE	[33-120	°F] ——		
2	FL	¹ FLAME LENG	TH	[.1-20 F	η		
3	MFWS	1 MIDFLAME W	/INDSPEED	[0-10 M	I/H]		-
OUTPUT	(DUN)						
		COODOLLII	FIGUE	FFFT			
	SCHT	SCORCH H	EIGHT	FEET			
	1 INPUT	ONLY IF SCORCE	HIS USED AS AN	INDEPENDEN	NT MODULE.		
						(rs. r	
Constitutions					no lare		
					188 -41 -175 Ta 1871 (+17)		
					uaritati e	tour tra	
					ARTON ARTON A	Section 2 Contract	
			OUTPUT TAR	IFS -			
			OUTPUT TAB	LES	LIST NUMBER	The second second	
TABLE NO.		TABLE ITEM			e y n gra	Simi.	
TABLE NO				ЕМ	e y n gra	Simi.	
	POINT _		ROW IT	TEM TOTAL	e y n gra	Same A	
PROJECTION ROW NO.	POINT _	c	ROW IT	TEM TOTAL	COLITEM _	A SECOND TO SECO	
PROJECTION ROW NO.	POINT _	W VALUE	ROW IT	TEM TOTAL	COL. ITEM	2000 K 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
PROJECTION ROW NO.	POINT _	W VALUE	ROW IT	TEM STATE OF THE S	TABLE VALUES	2000 K 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
PROJECTION ROW NO.	POINT	W VALUE	ROW IT	Successor 1	TABLE VALUES	A SEE SEE SEE SEE SEE SEE SEE SEE SEE SE	
PROJECTION ROW NO. 1. 2. 3. TABLE NO.	POINT	W VALUE	ROW II	TEM 30.2 VG.	TABLE VALUES	10000000000000000000000000000000000000	
PROJECTION ROW NO. 1. 2. 3.	POINT	W VALUE	ROW II	Successors Successors Successors TEM 28 VC.	TABLE VALUES A POST TOUR PROPERTY AND THE PROPERTY AND T	ACTIVE AC	6
PROJECTION ROW NO. 1. 2. 3. TABLE NO.	POINT POINT	W VALUE	ROW II	TEM AND TO STATE OF THE STATE O	TABLE VALUES COL. ITEM TABLE VALUES COL. ITEM TO COL. ITEM TO THE PROPERTY AND THE PRO	A SECTION OF THE SECT	6

¹ INPUT ONLY IF CORRESPONDING FUEL LOAD IS NOT ZERO.
2 INPUT ONLY IF MIDFLAME WINDSPEED (MFWS) AND SLOPE (SLP) ARE NOT ZERO.
3 OUTPUT ONLY IF CALCULATIONS ARE IN DIRECTION OF MAXIMUM SPREAD.

1 SLP% SLOPE STEEPNESS 2 SLP DEG SLOPE STEEPNESS 3 EL DIFFJ A: ELEVATION CHANGE 4 HORIZ HORIZONTAL DISTANCE DIST 1 INPUT ONLY FOR SCALE OPTION - 1 2 INPUT ONLY FOR SCALE OPTION - 2	IS IS	RF/1000 REPRESENTATIVE FRACTION/1000 E.G., RF OF 1/24000 = 24 IN/MI REPRESENTATIVE FRACTION/1000 FRACTION/1000	INPUT (INPUT, LIST) 0 1 SCL OPT SCALE OPTION 1 = REPRESENTATIVE TIME (1 OR 2) FRACTION	NPUT, LIST, BUN, QUIT) TO POINT	INPUT ONLY FOR EXPOSURE = 5. INPUT ONLY FOR EXPUSURE = 1.	1 MFWS MIDFLAME WINDSPEED WITH MITH		3 WAF 1 WIND ADJUSTMENT FACTOR (0-1)	2 EXPOSURE EXPOSURE TO WIND 1 EXPOSED 2 = PARTIALLY SHELTERED 3 = FULLY SHELTERED, OPEN STAND. 4 = FULLY SHELTERED, CLOSED STAND. 5 = ENTER WIND ADJUST- MENT FACTOR	ST) PROJECTION POINT 20-FT WINDSPEED	(KEYWORDS: INPUT, LIST, BUN, QUIT)
PROJECTION POINT COLUMN VALUES: ROW NO. ROW VALUE 1. 2. 3. NOVEMBER 1881	TABLE NOTABLE ITEM ROW ITEMCOUNTEM TOTALLY	1. (1.44) (1.44) (1.45) (1.44)	PROJECTION POINTS ————————————————————————————————————	OUTPUT TABLES LIST NUMBER TABLE NO. TABLE ITEM ROW ITEM COL ITEM	-888 = WET BULB TEMPERATURE GREATER THAN DHY BULB TEMPERATIONS999 = DEW POINT TOO COLD FOR VALID CALCULATIONS.	ERROR CODES:	2 DEWP DEW POINT OF	1 %RH RELATIVE HUMIDITY %	WETB WET BULB TEMPERATURE EL ELEVATION	INPUT (INPUT, LIST) 0 PROJECTION POINT 1 DRYB DRY BULB TEMPERATURE [33-120 F]	(KEYWORDS: INPUT, LIST, QUIT)

SPOT - MAP - IGNITE WORKSHEET

NAMEC	F FIRE		SHEET — FIRE PREDICTION SPEC.	OF
DATE - PROJ. F	PERIOD DATI		PROJ. TIME FROM ———	_то
			ODULE	
		37011	LIST NUMBER	
	()	KEYWORDS: INPUT, LIST, C		
INPUT	(INPUT, LIST	Γ)		
0		PROJECTION POINT	_	
1	BRAND SRC	FIREBRAND SOURCE	(1-3) —	
		1 = TORCHING TREES 3 = W 2 = BURNING PILES S	VIND DRIVEN SURFACE FIRE	
2	MCHT	MEAN COVER HEIGHT	[0-300 FT]	
3	20'W	20-FT WINDSPEED	[0 - 99 MVH]	
4	RVEL	RIDGE - TO - VALLEY ELEVATION DIFFERENCE	[0-4000 FT]	
5	RVHD	RIDGE - TO - VALLEY HORIZONTAL DISTANCE	[0-4 MI] ———————————————————————————————————	7.
6	SRC LOC	SPOTTING SOURCE LOCATION	(0.3)	· · · · · · · · · · · · · · · · · · ·
	96	0 = MIDSLOPE, WIN SIDE 1 = VALLEY BOTTO	DWARD * (12 1 MIDSLOPE, LEEWAR SIDE M 3 - RIDGETOP	D
7	TREE SP	1 TREE SPECIES	(1-6)	
***	11 = ENGELMA 2 = DOUGLAS SUBALPIN		OSA, 6 = BALSAM PINE,	
8	DBH	1 TORCHING TREE DBH	' [51-40 INCHES]	On MOLLER
9	TRHT	1 TORCHING TREE HEIGHT	[10 - 300 FT]	
10	#TR 7 .V	1 NUMBER OF TORCHING TREES	[1-30] BULAV AND	Gbutt
11		2 CONTINUOUS FLAME HEIGHT	[1-100 FT]	
12	100	3 FLAME LENGTH	[.1-50 FT] — —	¥
13	100	3 FUEL MODEL	(1-99) — —	A.
. 14		4 HERBACEOUS MOISTURE	[30 - 300%]	
		ertamente haben anna erratat (e. 1). dan erobahent herrekolatatat eretatak kelebilik oleh 💮 🤏	erotishisme states easies, easy or prestation was activity industrial in	and sentences to see the sentences of the
OUTPU	[(BUN),05	. MARINON	MRN JUNAT	
+-	SPOT	MAXIMUM SPOTTING DISTANCE	MI	
		V2.3: !	Jay CMILLOS Co	NA HOLLOSTO.
	E INTAV	ALMAT Y FOR FIREBRAND SOURCE = 1 (TO	RCHING TREE OPTION).	.5 e/O%
	7 70 70	Y FOR FIREBRAND SOURCE = 2 (BU	The second secon	1
	3 INPLIT ON	Y FOR FIREBRAND SOURCE = 3 (WII	ND-DRIVEN SURFACE FIRE OPTION).	2

⁴INPUT ONLY FOR DYNAMIC FUEL MODELS WITH A HERBACEOUS FUEL LOAD.

MAP MODULE

LIST NUMBE

			INPUT, LIST, RUN, QUIT)		
INPUT (I	NPUT, <u>L</u> IST)			
0		PROJECTION POINTS			
1	SCL OPT	SCALE OPTION 1 - REPRESENTATIVE FRACTION 2 - INCHES PER MILE	(1 OR 2)	1	
2	RF/1000	1 REPRESENTATION FRACTION/1000 E.G., RF OF 1/24000=24	(1-500)		
3	IN/MI	2 INCHES PER MILE	(.0625-8)		
4	UNITS OPT	UNITS OPTION		2	
6	SPOT	SPOT DISTANCE	[.1 - 10 MI]		
OUTPUT (RUN)				
1	MSPT	FORWARD SPOT DISTANCE ON MAP (UNITS OPT = 2	INCHES	-	
4					
area (see	and the second	ОШТРИТ	TABLES A LIST	NUMBER _	
TABLE	NO	$\tau_{\rm He}$.	TABLES A 34:		
<u> </u>		$\tau_{\rm He}$.	TABLES LIST		
PROJEC	TION POIN	TABLE ITEM	ROWITEM	COL.ITEM -	
<u> </u>	TION POIN	TABLE ITEM COLUMN VA	ROWITEM	COL. ITEM	
PROJEC	TION POIN	TABLE ITEM	ROWITEM	COL.ITEM -	
PROJECT ROW NO.	TION POIN	TABLE ITEM COLUMN VA	ROWITEM LUES: VIAT 133 PACE TO SERVICE TABLE AND THE SERVICE TABL	VALUES	-
PROJECT ROW NO.	TION POIN	TABLE ITEM TABLE ITEM COLUMN VA W VALUE (ROWITEM LUES: VAT 133 ACRES	VALUES	
PROJECT ROW NO.	TION POIN	TABLE ITEM COLUMN VA	ROWITEM LUES: VIAT 133 PACE TO SERVICE TABLE AND THE SERVICE TABL	VALUES	
PROJECT ROW NO.	TION POIN	TABLE ITEM T	ROWITEM LUES: VIATE STATE ACAD ACAD ACAD ACAD ACAD ACAD ACAD ACA	VALUES	
PROJECT ROW NO. 1. 2. 3.	RO	TABLE ITEM TABLE ITEM TCOLUMN VA W VALUE (MI 1 3000 0 (THE FIRST COLUMN	ROWITEM LUES: VIATE DE LES PARA LES PA	VALUES OFF TEIG 9AM GOL ITEM FIG. 10 B) TOB. T	- 110
PROJECTION NO.	RO RO	TABLE ITEM TABLE ITEM TCOLUMN VALUE (1000 0 (1000 0 (1000 0 TABLE ITEM COLUMN VALUE Cabridadi	ROWITEM LUES: YAT STATEMENT OF TABLE TO STATEMENT OF TABLE	VALUES OF THE PROPERTY OF THE	- 110
PROJECT ROW NO. 1. 2. 3.	RO RO	TABLE ITEM TABLE ITEM TCOLUMN VA W VALUE	ROWITEM LUES: VAT SET TABLE TO A SET T	VALUES OPT TOTAL TOTA	- 110
PROJECTION NO.	RO RO	TABLE ITEM TABLE ITEM TCOLUMN VALUE (1000 0 (1000 0 (1000 0 TABLE ITEM COLUMN VALUE Cabridadi	ROWITEM LUES: YAT SET TABLE TO A SET TO SET	VALUES OPT TOTAL TOTA	

IGNITE MODULE

(KEYWORDS: INPUT, LIST, BUN, QUIT)

)		
0		PROJECTION POINT	0	
1	TEMP	AMBIENT AIR TEMPERATURE	[33 - 120 F]	
2	1H	1 - H FUEL MOISTURE	[1-60%]	
3	SHAD	SHADE	[0-100%]	um Nersul esperant
OUTPU	I (RUN)			
1	P (I)	PROBABILITY OF IGNITION	% —	
			8 M LUN 842	,
	4	1.7.8	\$ 2.5	Çar
		OUTPUT T	ABLES	
		A CONTRACTOR OF THE PROPERTY O		LIST NUMBER
TAE	LE NO	TABLE ITEM	ROW ITEM	COL ITEM
PROJE	CTION POIN	COLUMN VALUES	S:	1 1
RO\	W NO.	ROW VALUE	MTAB	LE VALUES
RO	1. –	ROW VALUE		LE VALUES
RO\		ROW VALUE		LE VALUES
RO	1. — 2. —	ROW VALUE		LE VALUES
	1. — 2. — 3. —	g/4 -	The solution of the solution o	1 20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	1. — 2. — 3. —	975	The solution of the solution o	
TAI	1. — 2. — 3. —	TABLE ITEM	ROWITEM	COL ITEM
TAI	1. — 2. — 3. —	g/4 -	Teach and the second of the se	COLITEM STORY STOR
TAI	1. — 2. — 3. —	TABLE ITEM	Teach and the second of the se	COL ITEM
TAI	1. — 2. — 3. — BLE NO. — ECTION POIL	TABLE ITEM	Teach and the second of the se	COLITEM COLITEM COLITEM COLITEM COLITEM COLITEM COLITEM COLITEM COLITER COLITE
TAI	1. — 2. — 3. — BLE NO. — ECTION POIL	TABLE ITEM	Teach and the second of the se	COLITEM COLITEM COLITEM COLITEM COLITEM COLITEM COLITEM COLITEM COLITER COLITE

FINE DEAD FUEL MOISTURE CALCULATIO

	A.	PROJECTION POINT				
	В.	DAY OR NIGHT (D/N)	D/N	D/N	D/N	D/N
YAC	TIME C	ALCULATIONS				
	C.	DRY BULB TEMPERATURE, OF				
	D.	RELATIVE HUMIDITY, %		7718		
	E.	REFERENCE FUEL MOISTURE, % (FROM TABLE A)				
	F.	MONTH	4.14.11	- Control		
	G.	UNSHADED OR SHADED (U/S)	U/S	U/S	U/S	U/S
	Н.	TIME				
	1.	ELEVATION CHANGE	B/L/A	B/L/A	B/L/A	B/L/A
		B = 1000' - 2000' BELOW SITE L = ± 1000' OF SITE LOCATION A = 1000' - 2000' ABOVE SITE				
	J.	ASPECT				29
	K.	SLOPE		=====		
	L.	FUEL MOISTURE CORRECTION, % (FROM TABLE B, C, OR D)				
	М.	FINE DEAD FUEL MOISTURE, % (LINE E + LINE 1)	-			
NIG	нт тімі	E CALCULATIONS		11.11		
	N.	DRY BULB TEMPERATURE, OF		-		-
	0.	RELATIVE HUMIDITY, %	Charles 20	-ास्च	2 19.3	
	P.	A (Littoria Moce =)	a, i, a with		(.xta	
		USE TABLE F ONLY IF A STRONG INVERSION EXISTS AND A CORRECTION MUST BE MADE FOR ELEVATION OR ASPECT CHANGE.	3. 3.13	Be . MC.	10.4	
	Q.	ASPECT OF PROJECTION POINT	1.6. 11.7 F 1		Y Stie	
in the state of	· R	ASPECT OF SITE LOCATION	en ser <u>e e e e e e</u> e	CONTRACTOR OF THE PARTY OF THE		
	S.	TIPE TARTES SMIT	···		-	-
- 94	т. ¹	ELEVATION CHANGE B = 1000' - 2000' BELOW SITE L = ± 1000' OF SITE LOCATION A = 1000' - 2000' ABOVE SITE	BAJA	B/L/A	B/UA	B/L/A
	U.	CORRECTION FOR PROJECTION POINT LOCATION (FROM TABLE F)	au Los	144) A LOCAT	
	٧.	CORRECTION FOR SITE LOCATION (L)	31.	44.7		(: 1913)
	_W.	FUEL MOISTURE CORRECTION, % (LINE U - LINE V)				
	. X.	FINE DEAD FUEL MOISTURE, % (LINE P + LINE W)			NO	VEMBER 1991

0

SIZE - MAP - CONTAIN

OUTET
SHEET OF FIRE PREDICTION SPEC
TIME — PROJ. TIME FROM — TO —
E MODULE
LIST NUMBER
ST, ¹ CONTAIN, BUN, MAP, QUIT)
[.1-500 CH/H]
[.1 - 8H]
ACRES
CH CH
TIO
STANCE CH
TANCE CH A MANAGEMENT OF THE TANCE CHARACTER OF THE TANCE CHARACTER OF THE TANCE OF
For CRI 1991 In Page 44 19
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Y IF LINKED TO DIRECT.
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MAP MODULE

LIST NUMBER (KEYWORDS: (INPUT, LIST, RUN, QUIT)

INPUT (INPUT, LIST)		
0		PROJECTION POINT		
1	SCL OPT	SCALE OPTION 1- REPRESENTATIVE FRACTION 2- INCHES PER MILE	(1 OR 2)	
2	RF/1000	1 REPRESENTATION FRACTION/1000 E.G., RF OF 1/24000=24	(1-500)	
3	IN/MI	2 INCHES PER MILE	(.0625-8)	
4	UNITS OPT	UNITS OPTION 1 = SPREAD DISTANCE 2 = SPOTTING DISTANCE 3 = RATE OF SPREAD	(1-3)	
5	DIST	SPREAD DISTANCE	[0-1000 CH]	
6	SPOT	SPOTTING DISTANCE	[.1-10 MI]	
7	ROS	RATE OF SPREAD	[.1-500 CH/H] ———	
8	TIME	5 ELAPSED TIME	(.1-8H)	<u> </u>
5	FSD	FORWARD SPREAD DISTANCE	7 + 1 CH	
6	BSD 13	BACKING SPREAD DISTANCE	СН	
6711	, MXW	MAXIMUM FIRE WIDTH	Ma CH ₃ and	21-3,35)
OUTPUT	(RUN)	v Albes	280000 (C	en er
1	MFSD MAC + 1 -	FORWARD SPREAD DISTANCE ON MAP (UNITS OPT = 1 OR 3)	INCHES TO JAY WOR	
1	MSPT	SPOTTING DISTANCE ON MAP (UNITS OPT = 2)	INCHES	
2	MBSD	BACKING SPREAD DISTANCE ON MAP (SIZE LINKED ONLY)	INCHES	
3	MMXW	MAXIMUM FIRE WIDTH ON	INCHES	e de merce mante
	TONLY FOR SC	MAP (SIZE LINKED ONLY) ALE OPTION = 1.	MBILL DEM	TAGEENO
2 INPU	T ONLY FOR SC T ONLY FOR UN	ALE OPTION = 2. Carl (A	MMC100 OF DIME.	PROJECTION P.
4 INPU	TONLY FOR UN	ITS OPTION = 2.	REM AVERE	ou wos
5 INPUT	TONLY FOR UN	ITS OPTION = 3.		
		FOR LINKED RUN ONLY. NO INPUT	S NEEDED.	£

CONTAIN MODULE

LIST NUMBER

10

(KEYWORDS: INPUT, LIST, RUN, QUIT) INPUT (INPUT, LIST) PROJECTION POINT 0 **RUN OPTION** (1 OR 2) RUN OPT 1 = CALCULATE TOTAL LINE BUILDING RATE 2 = CALCULATE BURNED AREA (1 OR 2) ATTACK OPTION ATTACK 1 = HEAD OPT 2 = REAR 1 RATE OF SPREAD ROS [.1-500 CH/H] INITIAL FIRE AREA [.1-100 ACRES] AREA LENGTH -TO-WIDTH RATIO [1-5] L/W [.1-2000 ACRES] **BURNED AREA TARGET** BAT TOTAL LINE BUILDING 16 [.1-800 CH/H] TLBR garner A 17 42 GAZ OUTPUT (RUN) PER TOTAL LENGTH OF LINE CHAINS HOURS TIME CONTAINMENT TIME ABW IME ACRES **FFS** FINAL FIRE SIZE 1.2.4. HE TUT A FT TOTAL LINE BUILDING CH/H **TLBR** RATE one care later their MAXIMUM AREA ACRES MAXA CALCULABLE Francisco, Was 5 MINIMUM AREA ACRES MINA CALCULABLE ERROR CODES: A - DETNICE TAN SOLD -1 = BURNED AREA TARGET TOO LARGE, CANNOT CALCULATE SLOW ENOUGH LINE BUILDING RATE. -2 = LINE BUILDING RATE TOO SLOW TO CATCH FIRE. -3 = L/W RATIO TOO LARGE. -4 = BURNED AREA TARGET TOO CLOSE TO INITIAL FIRE SIZE. -5 = LINE BUILDING RATE TOO FAST. Parties Afron-1 INPUT ONLY WHEN CONTAIN IS USED AS AN INDEPENDENT MODULE. 2 INPUT ONLY FOR RUN OPTION = 1 (CALCULATE TOTAL LINE BUILDING RATE).

3 INPUT ONLY FOR RUN OPTION = 2 (CALCULATE BURNED AREA TARGET).

OUTPUT ONLY FOR RUN OPTION = 2.

OUTPUT ONLY FOR RUN OPTION = 1.

OUTPUT TABLES

ICT	MI	IRA	IR	FE

		JH .	411
1. 2. 3.	<u> </u>	Transfer to Asia Control of the Cont	-7V, 2 - 9
ROW NO.	ROW VALUE	# 144(14)(2)(4) Ť A I # 144(14)(2)(4)	
PROJECTION I	POINT COLUMN VA	LUES: 11.3.071.00	a julija sa sa
	TABLE ITEM	ROWITEM	
	\··	No (81)	19 ⁺ +
	er er en en en er en er		
2.		<u> </u>	#13 A 2 #3 ** i
ROW NO.	ROW VALUE	<u> </u>	BLE VALUES 22 39.
PROJECTION P	DINT COLUMN VA		12 NO.
TABLE NO	TABLE ITEM	ROW ITEM	COL ITEM
2. 3.	·		
1.			
	OINT COLUMN VAI		BLE VALUES
	TABLE ITEM		

ARLY AFTERNOON WEATHER MOISTURE 22 14T **BURN DAY 1400 TEMPERATURE** [33-120 F] **BURN DAY 1400 RELATIVE** [1-100%] 23 14RH NAME OF FIRE FIRE PREDICTION SPEC. HUMIDITY **BURN DAY 1400 20-FT WINDSPEED** 10-99 MVH1 24 14W TIME DATE 14CC **BURN DAY CLOUD COVER** [0-100%] 25 PROJ. TIME FROM TO PROJ. PERIOD DATE **BURN DAY 1400 HAZINESS** [1-4] 14H7 26 MOISTURE MODULE 1 - VERY CLEAR SKY 2 - AVERAGE CLEAR FOREST ATMOSPHERE (KEYWORDS: INPUT, LIST, BUN, QUIT) 3 - MODERATE BLUE HAZE 4 - DENSE HAZE-MODERATE SMOKE INPUT (INPUT, LIST) PROJECTION POINT SUNSET WEATHER [33-120°F] (1 OR 2) **RUN OPTION** SUNSET TEMPERATURE **RUN OPT** SST 27 1 - BURN TIME CALCULATIONS 2 - HOURLY CALCULATIONS SUNSET RELATIVE HUMIDITY SSHR [1-100%] TIME AND LOCATION SUNSET 20-FT WINDSPEED [0-99 MVH] SSW 29 **BURN MONTH** MONTH OF BURN (1-12)SUNSET CLOUD COVER [0-100%] 30 SSCC **BURN DAY** DAY OF BURN (1-31) " T. 11 517 11 SUNRISE WEATHER LATITUDE LATITUDE OF FIRE (-90 TO 90 DEGREES) [33-120 °F] 31 SRT SUNRISE TEMPERATURE **BURN TIME** TIME OF BURN (0-2359 H) SUNRISE RELATIVE HUMIDITY [1-100%] 32 SRRH SUNRISE 20-FT WINDSPEED [0-99 MVH] 33 SRW **FUEL MODEL** SUNRISE CLOUD COVER **FUEL MODEL NUMBER** (1-99)[0-100%] 6 MODEL # SRCC beiOn Silver 3.1: 1: SLOPE, ELEVATION, ASPECT **BURN TIME WEATHER** -1.5 10-100% SLOPE STEEPNESS BTT **BURN TIME TEMPERATURE** [33-120 F] 0-45 DEGREESI **BURN TIME RELATIVE HUMIDITY** BTRH [1-100%] **ELEVATION OF FIRE LOCATION** [0-12000 FT] 12 ELFL BURN TIME 20-FT WINDSPEED [0-99 MVH] 37 BTW RH OBS AT FIRE (Y/N) **BURN TIME CLOUD COVER** BTCC [0-100%] **ELEVATION OF T&RH OBSERVATIONS** (0-12000 FT) FLOR 13 BURN TIME HAZINESS 39 BTHZ ASPECT OF FIRE LOCATION (0-360 DEGREES) ASPECT 1 = VERY CLEAR SKY 0 - NORTH 180 - SOUTH 2 AVERAGE CLEAR FOREST ATMOSPHERE 90 . FAST 270 - WEST 3 - MODERATE BLUE HAZE 4 - DENSE HAZE-MODERATE SMOKE TIMBER OVERSTORY DESCRIPTION TALLEPIN CHOWN CLOSURE [0-100%] FUEL LEVEL WIND ADJUSTMENT EXPOSURE OF FUELS TO WIND TAIL SHALL EXPOSURE **FOLIAGE PRESENCE** (0 OR 1) FOLIAGE 0 - ABSENT STATE BUILDING HATE TOO SHOW IDEASTIBLE PHO 'EU ICH PUBLI COLUMN VALUES 1 - PRESENT 2 - PARTIALLY SHELTERED 2 - PARTIALLY SHELTERED BORN BORN COT OFFAN WYLL SHELTERED BORN FROM FROM THE SHEET BORNESS OF THE SHEET BORNESS O (0.0R 1) WOE SHADE TOLERANCE Ole was 0 = INTOLERANT 4 - FULLY SHELTERED - CLOSED T BLACK ONTO THE BUILT 1 - TOLERANT STAND 5 - DIRECT ENTRY OF WIND ADJUSTMENT FACTOR TO THE PROPERTY OF THE PROPE (1 OR 2) DOMINANT TREE TYPE DOM TYPE 1 = CONIFEROUS WIND ADJUSTMENT FACTOR 2 - DECIDUOUS 41 WAF EXPOSURE 5 ONLY PROTECTION AND TO STATE OF THE STATE OF T AVERAGE TREE HEIGHT [10-300 FT] AVTH TO THE PART OF THE PART OF CROWN HEIGHT/TREE 20 H/H [.1-1] HEIGHT RATIO Comment of the Commen CROWN HEIGHT/CROWN 21 H/D [.2-5] DIAMETER RATIO **NOVEMBER 1991** 11

	:					LOIS	OUTPUT (RUN)		59 WTHR	58 CD-1	57 WD-1	56 RD-1	55 TD · 1	MOISTURE OPTION 5	MOISTURE OPTION 4		54 SKY CODE	53 ADT	52 FAIN	51 FDAY	MOISTURE OPTION 3	44 FM-1	MOISTURE OPTION 1				MOISTURE INITIALIZATION OPTION 43 MOIS OPT MOISTURE OPTION	
		PROBABILITY OF IGNITION	-	FUEL LEVEL IEMPERATIONS		1 - HOUR FUEL MOISTURE	ar out	2 - COOL AND WET	HON	BURN DAY - 1 1400 CLOUD COVER	BURN DAY - 1 1400 20 FT WINDSPEED	BURN DAY - 1 1400 RELATIVE HUMIDITY	. 5		NO ADDITIONAL INDUST	1 - CLEAR 2 - CLOUDY 3 - PARTLY CLOUDY	SKY CONDITION FROM RAIN DAY - BURN DAY	1400 TEMPERATURE ON RAIN DAY	RAIN AMOUNT, HUNDREDTHS OF AN INCH	NUMBER OF DAYS BEFORE BURN RAIN OCCURRED		BURN DAY -1 FINE FUEL		5 - INCOMPLETE DATA; WEATHER PATTERN CHANGING	3 - INCOMPLE IE DAIA; HAIN THE WEEK BEFORE BURN. A BISCOURI ETE DATA: NO BAIN THE WEEK	1 - FINE FUEL MOISTURE KNOWN FOR DAY BEFORE BURN 2 - NOT ALLOWED	ON OPTION MOISTURE INITIALIZATION OPTION	
		* :	William St. T.	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	The state of the s	the time of the size of medical size of	10		0.1	[0-89]	[1:10%]	[33-120 ⁶ F]	all terms			[1:0]	[33-120°F] — — — —	[0-400]	[1-7DAYS]		[1-100%]		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	E WEEK		(1-5)	
BURN TIME \$0.	12			6.10		9	3,2				5	4	3	2	-	. 24	23	22	21	20	19	ā	;	17	16	15	TIME	HOURLY OUTPUT (RU
U.S. GOVERNMENT PRINTING OFFICE: 1991 -		2 9 3		10.01	200			74.00		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	,							0.01									FMOIST %	HOURLY OUTPUT (RUN)

This table is to help you estimat: the area of a fire, to ase it, poor the distance around the fire in chains of the time = 66 feet), and determins the general chape, of the fire. Then select the one column (1-6) which the area fits the fire's shope. Red under the column the area fits the you paced. Fire in the shape of a lectangle about four times longer than it is wide and having a fairly lirregular Explanation of columns representing shapes of firesi 1. Fire in the shape of a <u>Rectonelc</u>, about three times longer than it is wide. This solumn also gives the area of a <u>Irlangle</u> with a soderately irregular perlacter. Fire which is Long and Marrow ofth an irregular Fire with two or three long fingers or a very irregular perimeter. 2. Fire in the shape of either a 3quare or Nect which is not more than twice as long as it i wide with a moderately irregular perimeter. Note: For larger fires it is recommended that ground or acrial surveys be made to com-1. Fire in the general shape of a Circle. per Inster. perimeter. Portmotor in Chains

TAULE OF FIRE AREAS

STORY III ASPASS

TABLE OF FIRE AREAS

SETSOV TIL VZUT

This table is to help you estimat; the area of a fire. To use it, pace the distance around the five in chain (I chain "66 first) and distants the general shape of the first. Then select the one column (1-5) joich best fits the first shape. Head under the column the chain the two areas listed opposite the import of chains that you pecal.

Explanation of columns representing shapes of fires 1. Fire in the general shape of a Circle.

2. Fire in the shape of either a laune or lectangle which is not more than twice as long as it is wide with a mederately irregular perimeter. Policy

3. Fire in the shape of a <u>Rectangle</u>, about three these longer than it is wide. This column also gives the area of a <u>Triangle</u> with a moderatoly irregular perimeter.

*101 W 8, 3105 -

Fire in the shape of a decknake about four times longer than it is wide and having a fairly irregular perimeter.

THE WAR

5. Fire which is Long and Marrow with an irregular 37 perimeter.

Note: For larger fires it is recommended that ground or serial surveys be made to com-

6. Fire with two or three long fingers or a very irregular perimotor.

FULL.