

## Chapter 9. Working with NFDRS

---

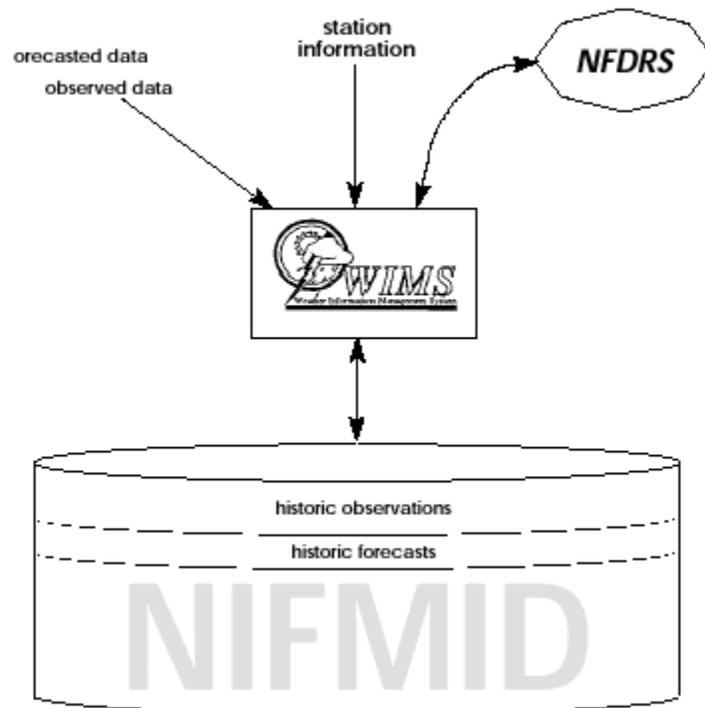
This chapter gives you the information you will need to display National Fire Danger Rating System (NFDRS) reports.

---

*The menu options and functions that you will be able to access depends on your access level. Not all tasks described in this chapter are available to everyone. For more information about access levels see Appendix A, “Menus, FastPaths, and access levels.”*

---

### The National Fire Danger Rating System



NFDRS provides information about current and predicted fire danger conditions on a broad scale. Using mathematical models, WIMS calculates NFDRS components and indices from observed and forecasted weather data. The WIMS database stores historical forecasts for approximately 18 months.

Using WIMS, you can obtain NFDRS information in a variety of forms, either by station number or by SIG.

---

*For a detailed description about NFDRS components and indices, see Appendix E, “NFDRS technical reference.”*

---

## Displaying NFDRS forms

NFDRS information can be displayed in the following formats:

- The Index (DIDX) form displays key fire weather variables and NFDRS indices.
- The Display Moisture Index (DIDM) form displays the calculated NFDRS moisture variables for a list of observations.
- The Manager's (DMGR) form displays several fire weather variables and lists many NFDRS indices.
- The Short (DSHR) form displays precipitation amount, duration data, SC (spread component), and adjective fire danger rating
- The Abbreviated (DABR) form displays the 1000-hr fuel moisture, as well as the NFDRS components and indices for regular, special, and forecast observations. The Lightning and Human Risk variables are no longer being used.
- The Weighted Averages (DAVG) form displays weighted NFDRS outputs for a SIG.

## Accessing National Fire Danger Rating menu

The National Fire Danger Rating menu allows you to display NFDRS information in a variety of formats.

### To access the National Fire Danger Rating menu

In the Option/ FastPath field, type DNFDR and click Go.



Remember, you can skip this menu by typing the FASTPATH command:

- DIDX, to access the Display NFDR (Index) form
- DIDM, to access the Display Moisture (Index) Format
- DMGR, to access the Display NFDR (Manager) form

- DSHR, to access the Display NFDR (Short) form
- DABR, to access the Display NFDR (Abbrev) form
- DAVG, to access the Display NFDRS Weighted Averages form.

## NFDRS field descriptions

Use the field descriptions listed below to specify the query block for the NFDRS form you want to display.

Field	Description and action to be taken
Station ID: (Station number) -or -	Enter the number of the NFDRS station you want to display.  -or -
SIG: (Special Interest Group name)	Enter the name of the SIG you want to display.
Type: (NFDRS observation type)	Enter the type of NFDRS observation: <ul style="list-style-type: none"> <li>• O, for a regular NFDRS observation</li> <li>• S, for a special NFDRS observation</li> <li>• F, for a forecast NFDRS observation.</li> </ul> <p><i>The default Type is " O. " This field may also be left blank, resulting in a display for all types of observations.</i></p>
Date: (NFDRS observation date)	Enter the NFDRS observation date, in the format DD-MMM-YY.  <i>You may also enter a date range. For more information, see "Searching by date" in Chapter 5, "Beyond the basics."</i>  <i>The default Date is today's date.</i>

### To retrieve tomorrow's (forecasted) NFDRS indices for today's observations

- 1 In the Option/ FastPath field, type the FASTPATH of the form you want to display and click Go.
- 2 In the Station ID field, type the number of the station you want to display, or In the SIG: field, type the Special Interest Group name.
- 3 In the Type field, type F.
- 4 In the Date field, type *tomorrow's* NFDRS observation date and click Find.

---

*The observation for today's date will show forecasted indices by using tomorrow's date in the date field.*

---

The NFDRS report displays, listing today's forecasted NFDRS indices for the station or SIG you specified.

### **Calculating NFDRS indices for a RAWS observation**

For NFDRS indices to be calculated, you must first edit the RAWS observation from Type= R to either a Type= O or a Type= S.

There are two basic steps to display a RAWS observation:

- 1 Edit the observation type field of the RAWS observation to either "O" or "S" to display a RAWS observation using one of the NFDRS forms.
- 2 Specify the form you want to review.

---

*When editing a RAWS observation, you must enter the observed state of the weather. Morning Lightning and Yesterday's Lightning are no longer being used. Enter a zero into Human Cause Risk and Forecasted Human Cause Risk.*

---

### **To edit a RAWS observation**

- 1 In the Option/ FastPath field, type EOBS and click Go.

The Edit Observation form displays.

---

*For an example of this form, see "EOBS form" in Chapter 7, "Working with Observations."*

---

- 2 In the Station ID field, type the station number of the RAWS station you want to display.
- 3 Complete the remaining fields in the form, as instructed on in the preceding pages and submit the form.

The Remote Automatic Weather Station Display form redisplay, listing the RAWS station information that you specified.

- 4 Select the desired RAWS observation from the dropdown menu.

---

*You must have access authority to edit a station. You can only have one regular observation (Type= O) per day. To edit the RAWS observation, change the observation type from Regular (Type= O) to Special (Type= S).*

---

- 5 Verify and edit, if necessary, the W, HC Rsk, and FHC Rsk fields, click Save

---

*State of the Weather (W field), HC Rsk and FHC Rsk are required fields. WIMS will not save changes to the RAWS observation if these fields are blank.*

---

---

*HC Risk and FHC Risk fields (human-caused risk and forecasted human-caused risk) are no longer used in the calculations, entering a 0 will satisfy the entry in the field. These fields along with Morning Lightning and Yesterday's Lightning will be removed in a future version of WIMS.*

---

### To display an edited RAWS observation in an NFDRS index form

- 1 Enter the FASTPATH of the form you want to display and click Go.
- 2 Verify that the station information fields are correct for the RAWS station you want to display and click Find.

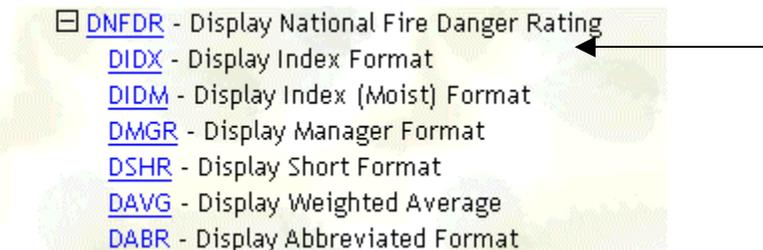
The NFDRS report that you specified redisplay, listing the RAWS observation you specified.

## Displaying the Index form

The Display NFDR (Index) form allows you to display key fire weather variables for regular and special observations and forecasts. Some key fields listed on the indexed form include:

- Fuel Model
- Moisture Contents
- Wind Speed
- Ignition Component
- Spread Component
- Energy Release Component
- Burning Index
- Fire Load Index
- Staffing Level
- Adjective Fire Danger Rating
- Keetch-Byram Drought Index.

### To access the Display NFDR (Index) form



[DNFDR](#) - Display National Fire Danger Rating  
[DIDX](#) - Display Index Format ←  
[DIDM](#) - Display Index (Moist) Format  
[DMGR](#) - Display Manager Format  
[DSHR](#) - Display Short Format  
[DAVG](#) - Display Weighted Average  
[DABR](#) - Display Abbreviated Format

In the Option/ FastPath: field, type DIDX and click Go.

Ver. 1.1.0 FastPath

## Index (DIDX) form

Enter the station number, the desired observation type, and the desired date, then click Find.

Display Index Format DIDX [Back to Menu](#)

Station ID:  or SIG  Type:  Date:  Time:

Station ID	Obs Dt	Tm	O T	MSGC	WS	WDY	HRB	1H	10	HU	TH	XH	IC	SC	EC	BI	FL	SL	R	KBDI	LR	LO	HR	HO
------------	--------	----	-----	------	----	-----	-----	----	----	----	----	----	----	----	----	----	----	----	---	------	----	----	----	----

Display Index Format DIDX [Back to Menu](#)

Station ID:  or SIG  Type:  Date:  Time:

Station ID	Obs Dt	Tm	O T	MSGC	WS	WDY	HRB	1H	10	HU	TH	XH	IC	SC	EC	BI	FL	SL	R	KBDI	LR	LO	HR	HO
421405	072202	13	O	7F2P2	4	50	2	2	3	5	4	3	87	34	61	100	71	5	E	439	0	0	10	9
421405	072202	13	O	7F2P2	4	50	2	2	3	5	4	3	87	34	61	100	71	5	E	439	0	0	10	9
421405	072202	13	O	7T2P2	4	50	2	2	3	5	4	3	41	22	23	52	37	3	M	439	0	0	10	4
421405	072202	13	O	7T2P2	4	50	2	2	3	5	4	3	41	22	23	52	37	4	H	439	0	0	10	4

## Index (DIDX) field definitions

Field	Brief description
MSGC	Fuel Model, Slope class, Grass type, and Climate class
WS	Wind Speed (ten-minute average measured at 20 feet)
WDY	Calculated live woody fuel moisture
HRB	Calculated herbaceous moisture content
1H	Calculated one-hour timelag fuel moisture content
10	Measured or calculated 10-hour timelag fuel moisture content
HU	Calculated 100-hour timelag fuel moisture content
TH	Calculated 1000-hour timelag fuel moisture content
IC	Ignition Component
SC	Spread Component
EC	Energy Release Component
BI	Burning Index

Field	Brief description
FL	Fire Load Index
SL	Staffing Level
R	Rating (adjective fire danger rating)
KBDI	Keetch-Byram Drought Index
x1000	Live fuel moisture recovery value
LR	Lightning Risk
LO	Lightning-caused fire Occurrence Index
HR	Human-Caused Risk
HO	Human-caused fire Occurrence index
MC	Staffing index -also known as Manning Class

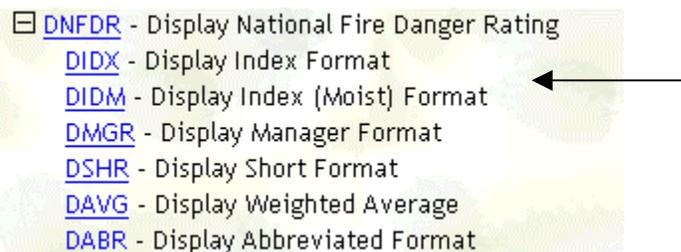
## Displaying the Moisture Index form

The Display Moisture (Index) form allows you to track and compare key NFDRS carry over values for a list of observations, including the x1000 live fuel moisture recovery value, and the wet flag setting for wet flag setting for those days.

The Moisture Index form makes it easy to compare:

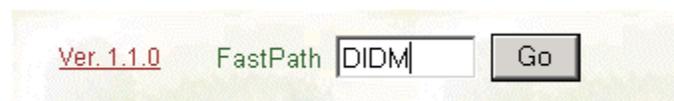
- Calculated against measured woody fuel moisture content, if available
- Fuel moistures for the 1-hour, 10-hour, 100-hour, 1000-hour indices and the x1000 live fuel moisture recovery value on a daily basis
- Track the increase/decrease of the live fuel moisture values

### To access the Display Moisture (Index) form



[DNFDR](#) - Display National Fire Danger Rating  
[DIDX](#) - Display Index Format  
[DIDM](#) - Display Index (Moist) Format ←  
[DMGR](#) - Display Manager Format  
[DSHR](#) - Display Short Format  
[DAVG](#) - Display Weighted Average  
[DABR](#) - Display Abbreviated Format

In the Option/ FastPath field, type DIDM and click Go.



Ver. 1.1.0 FastPath

## Moisture (DIDM) form

Display NFDR Moisture (Index) DIDM [Back to Menu](#)

Station ID:  or SIG:  Type:  Date:

Station ID	Obs Date	O T	MSGC	WDY FM	MEAS W FM	HRB FM	IHR FM	10H FM	100 FM	1000 FM	x1000 FM	SN CD	GREEN		KBDI	W F
													GR	SH		
40218	052602	O	7G3P2	142		153	4	4	8	18	18		0	0	89	N
40218	052502	O	7G3P2	145		157	3	4	9	18	18		0	0	82	N
40218	052402	O	7G3P2	147		162	3	4	11	19	19		0	0	74	N
40218	052302	O	7G3P2	150		166	3	4	13	19	19		0	0	67	N
40218	052202	O	7G3P2	152		170	4	6	14	19	19		0	0	63	N
40218	052102	O	7G3P2	157		175	8	9	15	20	20		0	0	61	N
40218	052002	O	7G3P2	161		179	13	35	15	20	20		0	0	60	Y
40218	051402	O	7G3P2	138		144	4	4	7	18	18		0	0	58	N
40218	051302	O	7G3P2	135		138	4	4	7	19	19		0	0	54	N
40218	051202	O	7G3P2	132		133	3	4	8	19	19		0	0	46	N
40218	051102	O	7G3P2	128		126	3	4	9	20	20		0	0	40	N
40218	051002	O	7G3P2	124		117	4	5	8	20	20		0	0	36	N
40218	050902	O	7G3P2	122		114	3	4	9	21	21		0	0	33	N
40218	050802	O	7G3P2	119		107	1	3	10	22	22		0	0	29	N
40218	050702	O	7G3P2	111		94	3	5	12	23	23		0	0	26	N
40218	050602	O	7G3P2	104		82	4	6	15	23	23		0	0	22	N
40218	050502	O	7G3P2	96		68	4	6	17	24	24		0	0	18	N
40218	050202	O	7G3P2	69		21	5	7	20	24	24		0	0	12	N
40218	050102	O	7G3P2	60		13	13	35	23	25	25		0	0	8	Y

## Moisture (DIDM) field definitions

Field	Brief description
MSGC	Fuel Model, Slope class, Grass type, and Climate class
WDY	FM calculated live woody fuel moisture content
MEAS W FM	Measured live woody fuel moisture content
HRB FM	Calculated herbaceous fuel moisture content
1 HR FM	Calculated one-hour timelag fuel moisture content
10H FM	Measured or calculated 10-hour timelag fuel moisture content
100 FM	Calculated 100-hour timelag fuel moisture content

1000 FM	Calculated 1000-hour timelag fuel moisture content
X1000 FM	Calculated live fuel moisture recovery value
SN CD	Season code (for 1988 fuel models only)
GREEN GR	Greenness factor -herbaceous (for 1988 fuel models only)
GREEN SH	Greenness factor -shrub (for 1988 fuel models only)
KBDI	Keetch-Bryam Drought Index
W F	Wet Fuels

For more information about NFDRS components, see Appendix E, “NFDRS technical reference.”

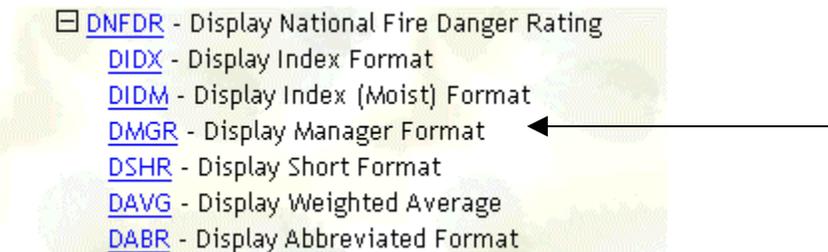
## Displaying the Manager's form

The Display NFDR (Manager) form allows you to display several fire weather variables for regular and special observations and forecasts, including a partial list of NFDRS information.

In addition to some of the key fields displayed on the index form, the manager's form also lists:

- Dry Bulb Temperature
- Dew Point Temperature
- Relative Humidity
- Total precipitation
- Accumulated hours of precipitation.

### To access the Display NFDR (Manager) form



[DNFDR](#) - Display National Fire Danger Rating  
[DIDX](#) - Display Index Format  
[DIDM](#) - Display Index (Moist) Format  
[DMGR](#) - Display Manager Format ←  
[DSHR](#) - Display Short Format  
[DAVG](#) - Display Weighted Average  
[DABR](#) - Display Abbreviated Format

In the Option/ FastPath field, type DMGR and click Go.



Ver. 1.1.0    FastPath

## Manager's (DMGR) form

Display Manager's Format (DMGR) [Back to Menu](#)

Station ID:  or SIG:  Type:  Date:

Station ID	Obs Date	Ob TM	O T	MSGC	DBT	DPT	WS	RH	PPAMT	PD	1H	10	IC	SC	EC	BI	FL	SL	R
------------	----------	-------	-----	------	-----	-----	----	----	-------	----	----	----	----	----	----	----	----	----	---

Display Manager's Format DMGR [Back to Menu](#)

Station ID: 421405 or SIG:  Type: 0 Date: 20-JUL-02

Station ID	Obs Date	Ob TM	O T	MSGC	DBT	DPT	WS	RH	PPAMT	PD	1H	10	IC	SC	EC	BI	FL	SL	R
421405	072002	13	O	7F2P2	70	52	9	53	0.05	3	9	9	16	13	13	32	23	2	L
421405	072002	13	O	7F2P2	70	52	9	53	0.05	3	9	9	16	13	13	32	23	3	M
421405	072002	13	O	7T2P2	70	52	9	53	0.05	3	9	9	13	35	6	34	24	1	L
421405	072002	13	O	7T2P2	70	52	9	53	0.05	3	9	9	13	35	6	34	24	3	M

### Manager's (DMGR) field definitions

Field	Brief description
MSGC	Fuel Model, Slope class, Grass type, and Climate class
DBT	Dry Bulb Temperature
DPT	Dew Point Temperature
WS	Wind Speed
RH	Relative Humidity
PPAMT	Precipitation Amount (24-hour)
PD	Precipitation Duration (24-hour)
1H	Calculated one-hour timelag fuel moisture content
10	Measured or calculated 10-hour timelag fuel moisture content
IC	Ignition Component
SC	Spread Component
EC	Energy Release Component
BI	Burning Index
FL	Fire Load Index
SL	Staffing Level
R	Rating (adjective fire danger rating)

For more information about NFDRS components, see Appendix E, "NFDRS technical reference."

## Displaying the Short form

The Display NFDR (Short) form allows you to query and display several fire weather variables for regular and special observations and forecasts.

The short form includes station information for:

- Fuel Model/ Slope class/ Grass type/ Climate class
- Total precipitation
- Accumulated hours of precipitation
- Staffing Level
- Adjective fire danger rating.

### To access the Display NFDR (Short) form

- [DNFDR](#) - Display National Fire Danger Rating
- [DIDX](#) - Display Index Format
- [DIDM](#) - Display Index (Moist) Format
- [DMGR](#) - Display Manager Format
- [DSHR](#) - Display Short Format ←
- [DAVG](#) - Display Weighted Average
- [DABR](#) - Display Abbreviated Format

In the Option/ FastPath: field, type DSHR and click Go.

Ver. 1.1.0 FastPath

## Short (DSHR) form

**Display Short Format (DSHR)** [Back to Menu](#)

Station ID:  or SIG:  Type:  Date:

Station ID	Obs Date	Ob TM	O T	MSGC	PPAMT	PD	SL	R
---------------	-------------	----------	--------	------	-------	----	----	---

**Display Short Format DSHR**

Station ID:  or SIG  Type:  Date:

Station ID	Obs Date	Ob TM	O T	MSGC	PPAMT	PD	SL	R
421405	072002	13	O	7F2P2	0.05	3	2	L
421405	072002	13	O	7F2P2	0.05	3	3	M
421405	072002	13	O	7T2P2	0.05	3	1	L
421405	072002	13	O	7T2P2	0.05	3	3	M

### Short (DSHR) field definitions

Field	Brief description
MSGC	Fuel Model, Slope class, Grass type, and Climate class
PPAMT	Precipitation Amount (24-hour)
PD	Precipitation Duration (24-hour)
SL	Staffing Level
R	Rating (adjective fire danger rating)

### Displaying the Weighted Averages form

Using NFDRS Weighted Average calculations, the Display NFDRS Weighted Averages (DAVG) form combines NFDRS indices from individual stations within a SIG into a single index.

---

*Care must be used when comparing inputs from different fuel models.*

---

A component weight is a value between 01 and 99 that represents the influence it has in the calculation. The total component weight for individual stations within a SIG must equal 100. The component weight can include factors such as the percent of the total area represented by the station, resource values, historic fire occurrence, and public use patterns.

---

*Use the Edit Weighted Averages (EAVG) form to assign weights to stations within your SIG. For more information, see "Assigning NFDR weighted averages to your SIG," in Chapter 6, "Working with Station Information."*

---

**To access the Display NFDRS Weighted Averages (DAVG) form**

- [DNFDR](#) - Display National Fire Danger Rating
- [DIDX](#) - Display Index Format
- [DIDM](#) - Display Index (Moist) Format
- [DMGR](#) - Display Manager Format
- [DSHR](#) - Display Short Format
- [DAVG](#) - Display Weighted Average ←
- [DABR](#) - Display Abbreviated Format

In the Option/ FastPath: field, type DAVG and click Go.

Ver. 1.1.0    FastPath

**Weighted Averages (DAVG) form**

**Display NFDR Weighted Averages (DAVG)** [Back to Menu](#)

SIG:  Type:  Date:

WS   WDY   HRB   1H   10   HU   TH   IC   SC   EC   BI   FL   SL   R   KBDI

Weighted Total:

Station ID	Observation		Priority	Weight %
	Time	Type		

**Display NFDR Weighted Averages DAVG** [Back to Menu](#)

SIG:  Type:  Date:  Time:

WS   WDY   HRB   1H   10   HU   TH   IC   SC   EC   BI   FL   SL   R   KBDI

Weighted Total:      4    68    45    2    3    5    9    49    10    30    39    28    5    V    237

Station ID	Observation		Priority	Weight %
	Time	Type		
352107	13	0	1	20
352207	13	0	1	20
352208	13	0	1	20
352701	13	0	1	20
352711	13	0	1	20

## Weighted Averages (DAVG) field definitions

Field	Brief description
WS	Wind Speed
WDY	Calculated live woody fuel moisture
HRB	Calculated herbaceous moisture content
1H	Calculated one-hour timelag fuel moisture content
10	Measured or calculated 10-hour timelag fuel moisture content
HU	Calculated 100-hour timelag fuel moisture content
TH	Calculated 1000-hour timelag fuel moisture content
IC	Ignition Component
SC	Spread Component
EC	Energy Release Component
BI	Burning Index
FL	Fire Load Index
SL	Staffing Level
R	Rating (adjective fire danger rating)
KBDI	Keetch-Byram Drought Index

When you display the Weighted Averages (DAVG) form, WIMS leaves Ignition Component (IC), Spread Component (SC), and Energy Release Component (EC) blank if the priority 1 fuel model for each station is not the same.

### ***How WIMS handles IFPL calculations***

The DAVG function in WIMS also calculates Industrial Fire Precaution Level (IFPL) values for stations cataloged in USFS Region 6.

## Displaying the Abbreviated form

The Display Abbreviated (DABR) form allows you to query and display an abbreviated version of the Index form for regular and special observations and forecasts. Some key fields listed on the abbreviated form include:

- Lightning Risk
- Ignition Component
- Spread Component
- Energy Release Component
- Burning Index
- Fire Load Index

- Staffing Level
- Adjective Fire Danger Rating.

**To access the Display NFDR (Abbrv) form**

- [DNFDR](#) - Display National Fire Danger Rating
- [DIDX](#) - Display Index Format
- [DIDM](#) - Display Index (Moist) Format
- [DMGR](#) - Display Manager Format
- [DSHR](#) - Display Short Format
- [DAVG](#) - Display Weighted Average
- [DABR](#) - Display Abbreviated Format ←

In the Option/ FastPath field, type DABR and click Go.

Ver. 1.1.0    FastPath    

**Abbreviated (DABR) form**

**Display Abbreviated Format (DABR)** [Back to Menu](#)

Station ID:  or SIG:  Type:  Date:

Station ID	Obs Date	Ob TM	O T	MSGC	TH	IC	LR	LO	HR	HO	SC	EC	BI	FL	SL	R

**Display Abbreviated Format DABR** [Back to Menu](#)

Station ID:  or SIG:  Type:  Date:

Station ID	Obs Date	Ob TM	O T	MSGC	TH	IC	LR	LO	HR	HO	SC	EC	BI	FL	SL	R
352107	072002	13	O	7C2P2	7	52	0	0	1	1	11	18	34	24	4	V
352107	072002	13	O	7G2P2	7	52	0	0	1	1	10	80	66	47	4	V
352107	072002	13	O	7T2P2	7	47	0	0	1	1	26	20	53	38	3+	H
352107	072002	13	O	7C2P2	7	52	0	0	1	1	11	18	34	24	3+	H
352207	072002	13	O	7G2P2	11	35	0	0	1	0	8	65	52	37	5	V
352208	072002	13	O	7C2P2	7	50	0	0	1	1	10	22	36	26	5	V
352208	072002	13	O	7G2P2	7	48	0	0	1	1	9	85	62	44	4	V
352701	072002	13	O	7C2P2	8	52	0	0	1	1	9	23	35	25	5	V
352701	072002	13	O	7G2P2	8	51	0	0	1	1	8	80	58	41	5	V
352711	072002	13	O	7C2P2	9	55	0	0	1	1	10	24	38	27	5	V
352711	072002	13	O	7G2P2	9	54	0	0	1	1	9	77	60	43	4	V

**Abbreviated (DABR) field definitions**

<b>Field</b>	<b>Brief description</b>
MSGC	Fuel Model, Slope class, Grass type, and Climate class
TH	Calculated 1000-hour timelag fuel moisture content
IC	Ignition Component
LR	Lightning Risk
LO	Lightning-caused fire Occurrence Index
HR	Human-Caused Risk
HO	Human-caused Fire Occurrence index
SC	Spread Component
EC	Energy Release Component
BI	Burning Index
FL	Fire Load Index
SL	Staffing Level
R	Rating (adjective fire danger rating)