

## Updates to the WIMS User's Guide - July 21, 1998

This packet contains the August 4, 1998 updates to the *WIMS User's Guide*. Please replace the following pages with the enclosed pages that are dated August 4, 1998:

Page numbers	Description of changes
5.7-5.8	Added reference to ORACLE documentation (page 5.8)
5.9 - 5.10	Added "Query Where" screen example (page 5.9)
5.17 - 5.18	Corrected date range specification on screen (page 5.18)
6.9 - 6.10	Reworded Aspect field description (page 6.9)
7.7 - 7.8	Reworded Wind Dir field description (page 7.8)
7.9 - 7.10	Deleted state of weather codes 4 and 8 from the note (page 7.9)
8.9 - 8.10	Deleted state of weather codes 4 and 8 from the note (page 8.10)
8.15 - 8.16	Deleted state of weather codes 4 and 8 from the note (page 8.16)
E.1 - E.2	Added "Latitude" to Site Description (page E.2)
E.9 - E.10	Added adjective fire-danger class and color code descriptions (page E.10)
E.19 - E.20	Added descriptive text to "Cured" in graphic (page E.19)
F.15 - F.16	Revise breakpoint value text (page F.16)

Insert this page after "Preface," in the *WIMS User's Guide*.



### To perform a wildcard query - example 3

Now let's go to the Fire Weather Forecasts form. Let's look for all Denver, Colorado Fire Weather Forecasts for May 4, 1995. We will use the SEARCH FOR command and specify two search criteria by using percent sign (%).

1. In the *Option/Fastpath:* field, type **FWFCST** and press **<NEW LINE>**.
2. In the *Command:* field, type **SEARCH FOR 050495%KDEN** and press **<NEW LINE>**.

As shown below, every Denver Fire Weather Forecast for May 4, 1995 displays in the Shared File Directory.

```

M09F                               Weather Information Management System           05-May-97
                                Shared File Directory Listing

File type  Name          Short Description          A B
FIRE WX    FXUS7           050495/05:45/KDEN/FIRE WEATHER FCST Y N
FIRE WX    FXUS7           050495/22:04/KDEN/FIRE WEATHER FCST Y N

Command:  SEARCH FOR 050495%KDEN
          F2-Help    F3-Previous Screen    F4-Next Screen    F11-Exit
-----
                                Page LIST QUEUE          Count:

```

## Using the ampersand (&) wildcard

The ampersand (&) allows you to initiate a custom query based on any field or combination of fields in the List Stations form (*FASTPATH: LSTA*).



*The examples that follow show basic queries you can perform. However, you must be familiar with ORACLE operators employed in the NIFMID database. Additionally, you must type these operators in CAPITAL LETTERS and use single quotes around character entries. For an example of using single quote marks, see examples 2 and 3 on the following pages. For more information about ORACLE operators, refer to your ORACLE documentation.*

### To initiate a custom query on the List Stations form - example 1

In this example, you will initiate a query to list stations in forecast zone 619.



*For field names and definitions on the List Stations form, see Chapter 6, "Working with station information."*

From the List Stations form:

1. In the *Owner* field, type & (ampersand), press <TAB> six times, then press <NEW LINE>.

The Query Where pop-up screen for this example is shown on the next page.

```

+-----+-----+-----+-----+-----+-----+-----+-----+
| SELECTION PARAMETERS:          List Stations |
| Owner      Station  Nesdis   Station name  Typ  Obs TM  Agency |
| &_____  _____  _____  _____  -   -   -   -   |
+-----+-----+-----+-----+-----+-----+-----+-----+
| Owner      Station ID Nesdis ID  Station name  Typ  Obs TM  Agency |
| &_____  _____  _____  _____  -   -   -   -   |
+-----+-----+-----+-----+-----+-----+-----+
|                                     Query Where |
| Criteria:  FCST_ZONE=619 _____          |
|          _____                          |
|          _____                          |
|          _____                          |
+-----+-----+-----+-----+-----+-----+-----+
| F2-Help    F5-Show Keys  F11-Exit  F17-Display/Edit Station Detail |
| Press PF1 to execute query, PF11 to return to enter query mode._____ |
| Count: *0                                     ENTER QUERY |
+-----+-----+-----+-----+-----+-----+-----+

```

2. At the cursor, type the *search criteria*, then press <F1> to execute the query.

For example, type **FCST\_ZONE=619** and press <F1>.

The List Stations form shown on the next page redisplay, listing every station in the forecast zone “619.”



FCST-NFDR: (number of NFDRS forecasts)	Displays the number of records captured by WIMS for forecasts that contain NFDRS data.
--	--

## To capture data for an observation

From the DATA CAPTURE FOR OBS/FCST/NFDR form:

1. In the *Station ID:* field, type the **station number** of the station for the new observation and press <TAB>.

or

In the *SIG:* field, type the **Special Interest Group name** and press <TAB>.

2. In the *Type:* field, type the **observation type** and press <TAB>.

*You may leave this field blank.*

3. In the *Date:* field, type the **date** the observation was recorded and press <CTRL> + <F2> (<F14>). For A2B or SimPC, press <SHIFT> + <F2>.

Info: 1 Reports been captured. See PFILE.

displays on the bottom of the DATA CAPTURE FOR OBS/FCST/NFDR form.

The information you captured is saved in a file in your Private File Directory.



*Although this function key does not appear on the form, you may press <F1> to capture the report.*

4. To return to the previous menu, press <F11>.



*For more information about your Private File Directory Listing, see “Your Private File Directory” in Chapter 10, “Working with WIMS Utilities.”*

## To capture specific search criteria into a report - an example

Suppose you want to capture an NFDRS Index (DIDX) report for station "52704." You specify a date range from May 01, 1997 to May 15, 1997 and want to capture only regular (Type=O) observations.

1. In the *Option/Fastpath:* field, type **DIDX** and press <NEW LINE>.
2. Complete the desired fields in the query block as shown below, then press <NEW LINE>.

```

+----- Display NFDR (Index) -----+
| (Station ID: 52704_ or SIG: _____) Type: O Date: 01-MAY-97 15-MAY-97_|
+-----+
Station Obs Ob O
ID Date Tm T MSGC WS WDY HRB 1H 10 HU TH IC SC EC BI FL SL R KBDI
52704_ 051595 12 O 7F3A2 15 60 5 5 6 12 18 59 38 22 66 47 1_ L 5
52704_ 051595 12 O 7T3A2 15 60 5 5 6 12 18 57 88 16 85 61 4_ V 5
52704_ 051595 12 O 7H3A2 15 60 5 5 6 12 18 58 8 23 32 24 1_ L 5
52704_ 051495 12 O 7F3A2 4 60 6 6 7 15 19 28 8 14 27 21 1_ L 3
52704_ 051495 12 O 7T3A2 4 60 6 6 7 15 19 23 22 14 42 31 1_ L 3
52704_ 051495 12 O 7H3A2 4 60 6 6 7 15 19 28 3 18 18 15 1_ L 3
52704_ 051395 12 O 7F3A2 7 60 8 8 10 18 19 20 11 7 22 16 1_ L 1
52704_ 051395 12 O 7T3A2 7 60 8 8 10 18 19 17 31 8 37 26 1_ L 1
52704_ 051395 12 O 7H3A2 7 60 8 8 10 18 19 19 3 12 16 11 1_ L 1
52704_ 051295 12 O 7F3A2 3 60 16 16 25 19 19 0 0 0 0 7 1_ L 1
52704_ 051295 12 O 7T3A2 3 60 16 16 25 19 19 0 0 0 0 7 1_ L 1
52704_ 051295 12 O 7H3A2 3 60 16 16 25 19 19 1 1 2 5 8 1_ L 1
52704_ 051195 12 O 7F3A2 9 60 6 6 8 14 17 33 14 14 34 25 1_ L 55
52704_ 051195 12 O 7T3A2 9 60 6 6 8 14 17 30 45 13 56 40 1_ L 55
-----
F2-Help F5-Show Keys F11-Exit F17-Expanded Display
-----
Count: 14 v

```

3. To capture this information, press <CTRL> + <F2> (<F14>). For A2B or SimPC, press <SHIFT> + <F2>.

The message:

Data Capture is complete. See PFILE

displays on the bottom of the Display NFDR (Index) form.

You can now browse and/or print the report from your Private File Directory.

Aspect (aspect class code)	<p>Enter the aspect class code to identify the cardinal direction of the slope where the station is situated:</p> <table border="0"> <thead> <tr> <th><b><u>Code</u></b></th> <th><b><u>Description</u></b></th> </tr> </thead> <tbody> <tr><td>0</td><td>Flat/None</td></tr> <tr><td>1</td><td>Northeast</td></tr> <tr><td>2</td><td>East</td></tr> <tr><td>3</td><td>Southeast</td></tr> <tr><td>4</td><td>South 180°</td></tr> <tr><td>5</td><td>Southwest</td></tr> <tr><td>6</td><td>West</td></tr> <tr><td>7</td><td>Northwest</td></tr> <tr><td>8</td><td>North.</td></tr> </tbody> </table>	<b><u>Code</u></b>	<b><u>Description</u></b>	0	Flat/None	1	Northeast	2	East	3	Southeast	4	South 180°	5	Southwest	6	West	7	Northwest	8	North.		
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Elevation (station elevation)	Enter the station's elevation, in feet above sea level.																						
Site (station site location)	<p>Enter the site code that best describes the station location:</p> <table border="0"> <thead> <tr> <th><b><u>Code</u></b></th> <th><b><u>Description</u></b></th> </tr> </thead> <tbody> <tr><td>1</td><td>Valley bottom or flat</td></tr> <tr><td>2</td><td>Midslope</td></tr> <tr><td>3</td><td>Ridge or peak top.</td></tr> </tbody> </table>	<b><u>Code</u></b>	<b><u>Description</u></b>	1	Valley bottom or flat	2	Midslope	3	Ridge or peak top.														
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Local Time Zone (standard time zone code)	<p>Enter the local standard time zone code:</p> <table border="0"> <thead> <tr> <th><b><u>Code</u></b></th> <th><b><u>Description</u></b></th> </tr> </thead> <tbody> <tr><td>AST</td><td>Atlantic Standard Time</td></tr> <tr><td>BST</td><td>Bering Standard Time</td></tr> <tr><td>CST</td><td>Central Standard Time</td></tr> <tr><td>EST</td><td>Eastern Standard Time</td></tr> <tr><td>GMT</td><td>Greenwich Mean Time</td></tr> <tr><td>HST</td><td>Hawaiian Standard Time</td></tr> <tr><td>MST</td><td>Mountain Standard Time</td></tr> <tr><td>NST</td><td>Newfoundland Standard Time</td></tr> <tr><td>PST</td><td>Pacific Standard Time</td></tr> <tr><td>YST</td><td>Yukon Standard Time.</td></tr> </tbody> </table>	<b><u>Code</u></b>	<b><u>Description</u></b>	AST	Atlantic Standard Time	BST	Bering Standard Time	CST	Central Standard Time	EST	Eastern Standard Time	GMT	Greenwich Mean Time	HST	Hawaiian Standard Time	MST	Mountain Standard Time	NST	Newfoundland Standard Time	PST	Pacific Standard Time	YST	Yukon Standard Time.
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Previous Station (previous station number)	<p>Enter the number of the previous station, if applicable.</p> <p><i>If a station was not moved or changed from manual to RAWs you can identify it, or if the number changed you can cross reference the historic data.</i></p>																						
Mnemonic	Enter the assigned station mnemonic, up to 6 characters, to name the site.																						
Unit Name (unit name)	Enter the name of the station or the name of the unit responsible for the station.																						
Owner (owner's WIMS logon ID)	Enter the WIMS logon ID of the person who owns the station.																						

Observing Agency (responsible observing agency)	Enter the code that corresponds to the agency responsible for the station:  <table border="0"> <thead> <tr> <th><u>Code</u></th> <th><u>Description</u></th> </tr> </thead> <tbody> <tr><td>1</td><td>USDA Forest Service</td></tr> <tr><td>2</td><td>USDI Bureau of Land Mgmt</td></tr> <tr><td>3</td><td>USDI National Park Service</td></tr> <tr><td>4</td><td>USDI Bureau of Indian Affairs</td></tr> <tr><td>5</td><td>State</td></tr> <tr><td>6</td><td>City, County, Special Dist</td></tr> <tr><td>7</td><td>Private or Commercial</td></tr> <tr><td>8</td><td>Other Federal</td></tr> <tr><td>9</td><td>Unknown.</td></tr> </tbody> </table>	<u>Code</u>	<u>Description</u>	1	USDA Forest Service	2	USDI Bureau of Land Mgmt	3	USDI National Park Service	4	USDI Bureau of Indian Affairs	5	State	6	City, County, Special Dist	7	Private or Commercial	8	Other Federal	9	Unknown.
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Access Control List (related ACL)	Enter the name of the Access Control List for the station, if any.																				
Regular Scheduled Observation Time	Using the 24-hour clock, enter the local time to the nearest hour when observations are recorded:  <table border="0"> <thead> <tr> <th><u>Code</u></th> <th><u>Time</u></th> </tr> </thead> <tbody> <tr><td>11</td><td>11:00 am</td></tr> <tr><td>12</td><td>noon</td></tr> <tr><td>13</td><td>1:00 pm</td></tr> <tr><td>14</td><td>2:00 pm</td></tr> <tr><td>15</td><td>3:00 pm.</td></tr> </tbody> </table> <p><i>WIMS truncates the time to the hour. The Standard Observation Time is "13" (1:00 pm).</i></p>	<u>Code</u>	<u>Time</u>	11	11:00 am	12	noon	13	1:00 pm	14	2:00 pm	15	3:00 pm.								
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Humidity Code: (type of humidity measurement)	Enter the humidity code that WIMS is to expect for observations:  <table border="0"> <thead> <tr> <th><u>Code</u></th> <th><u>Description</u></th> </tr> </thead> <tbody> <tr><td>1</td><td>Wet-Bulb Temperature (deg. F)</td></tr> <tr><td>2</td><td>Relative Humidity (percent)</td></tr> <tr><td>3</td><td>Dewpoint Temperature (deg. F)</td></tr> <tr><td>4</td><td>Wet-Bulb Temperature (deg. C)</td></tr> <tr><td>5</td><td>RESERVED --DO NOT USE</td></tr> <tr><td>6</td><td>Dewpoint Temperature (deg. C).</td></tr> </tbody> </table> <p><i>The default Humidity Code for a manual station is "1" (Wet-Bulb). If you will be measuring <b>relative humidity</b> in the station's observations and forecasts, you must <b>set the Humidity Code to "2"</b> (Relative Humidity). RAWS stations default to Humidity Code "2".</i></p>	<u>Code</u>	<u>Description</u>	1	Wet-Bulb Temperature (deg. F)	2	Relative Humidity (percent)	3	Dewpoint Temperature (deg. F)	4	Wet-Bulb Temperature (deg. C)	5	RESERVED --DO NOT USE	6	Dewpoint Temperature (deg. C).						
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Temperature Code: (type of temperature measurement)	Enter the temperature code to identify the measurement system:  <table border="0"> <tbody> <tr><td>1</td><td>English (IN / MPH / Degrees F)</td></tr> <tr><td>2</td><td>Metric (MM / KPH / Degrees C).</td></tr> </tbody> </table>	1	English (IN / MPH / Degrees F)	2	Metric (MM / KPH / Degrees C).																
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<p>Ob Tm (observation time)</p>	<p>Using the 24-hour clock, displays the local standard time of the observation:</p> <table border="0"> <thead> <tr> <th><u>Code</u></th> <th><u>Time</u></th> </tr> </thead> <tbody> <tr> <td>11</td> <td>11:00 am</td> </tr> <tr> <td>12</td> <td>noon</td> </tr> <tr> <td>13</td> <td>1:00 pm</td> </tr> <tr> <td>14</td> <td>2:00 pm</td> </tr> <tr> <td>15</td> <td>3:00 pm.</td> </tr> </tbody> </table> <p><i>WIMS truncates the time to the hour. The default observation time is "13" (1:00 pm).</i></p>	<u>Code</u>	<u>Time</u>	11	11:00 am	12	noon	13	1:00 pm	14	2:00 pm	15	3:00 pm.												
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<p>Dry Tmp (dry bulb temperature)</p>	<p>Displays the observed dry bulb temperature in degrees. <i>Fahrenheit or Celsius is specified in the Temperature Code field in the station catalog.</i></p>																								
<p>Hum Val (measured humidity)</p>	<p>Displays the measured humidity, if available. <i>Based on the station catalog, this field identifies:</i></p> <ul style="list-style-type: none"> <li><i>wet bulb temperature</i></li> <li><i>dew point temperature</i></li> <li><i>relative humidity.</i></li> </ul>																								

<p>ML (morning's lightning - required)</p>	<p>Displays the morning's lightning activity level:</p> <table border="1"> <thead> <tr> <th><b>Code</b></th> <th><b>Description</b></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>no thunderstorms or building cumulus clouds</td> </tr> <tr> <td>2</td> <td>infrequent lightning, few building cumulus</td> </tr> <tr> <td>3</td> <td>occasional lightning, scattered cumulus</td> </tr> <tr> <td>4</td> <td>frequent lightning, cumulus to 1/3 area</td> </tr> <tr> <td>5</td> <td>frequent and intense lightning, cumulus common</td> </tr> <tr> <td>6</td> <td>dry lightning, low lightning flash rate, scattered towering cumulus, with virga.</td> </tr> </tbody> </table> <p><i>This field must not be blank.</i></p>	<b>Code</b>	<b>Description</b>	1	no thunderstorms or building cumulus clouds	2	infrequent lightning, few building cumulus	3	occasional lightning, scattered cumulus	4	frequent lightning, cumulus to 1/3 area	5	frequent and intense lightning, cumulus common	6	dry lightning, low lightning flash rate, scattered towering cumulus, with virga.																						
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<p>HC Rsk (human-caused risk)</p>	<p>Displays the human-caused risk (HCR) factor for the station, a value from 0 to 100.</p>																																				
<p>Wind Dir (wind direction)</p>	<p>Displays the direction where the wind is blowing from, in degrees:</p> <table border="1"> <thead> <tr> <th><b>Code</b></th> <th><b>Equivalent wind direction in degrees</b></th> </tr> </thead> <tbody> <tr> <td>NNE</td> <td>23</td> </tr> <tr> <td>NE</td> <td>45</td> </tr> <tr> <td>ENE</td> <td>68</td> </tr> <tr> <td>E</td> <td>90</td> </tr> <tr> <td>ESE</td> <td>113</td> </tr> <tr> <td>SE</td> <td>135</td> </tr> <tr> <td>SSE</td> <td>158</td> </tr> <tr> <td>S</td> <td>180</td> </tr> <tr> <td>SSW</td> <td>203</td> </tr> <tr> <td>SW</td> <td>225</td> </tr> <tr> <td>WSW</td> <td>248</td> </tr> <tr> <td>W</td> <td>270</td> </tr> <tr> <td>WNW</td> <td>293</td> </tr> <tr> <td>NW</td> <td>315</td> </tr> <tr> <td>NNW</td> <td>338</td> </tr> <tr> <td>N</td> <td>360</td> </tr> <tr> <td>FL</td> <td>0.</td> </tr> </tbody> </table>	<b>Code</b>	<b>Equivalent wind direction in degrees</b>	NNE	23	NE	45	ENE	68	E	90	ESE	113	SE	135	SSE	158	S	180	SSW	203	SW	225	WSW	248	W	270	WNW	293	NW	315	NNW	338	N	360	FL	0.
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NNW	338																																				
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FL	0.																																				
<p>Wind Sp (wind speed)</p>	<p>Displays the observed average ten-minute wind speed.</p>																																				
<p>10 Hr (ten-hour fuel stick moisture content)</p>	<p>Displays the measured ten-hour fuel stick moisture content. <i>If the Wet Fuels field is set to "Y" the default ten-hour fuel stick moisture content is "35".</i> <i>For a RAWS station without an associated manual station, WIMS calculates this value.</i></p>																																				

Temp Max (24-hour maximum temperature)	Displays the maximum temperature observed in the last 24 hours of observation time. <i>The maximum temperature <b>must be equal to or higher than the dry bulb temperature (Dry Tmp field) at observation time.</b></i>
Temp Min (24-hour minimum temperature)	Displays the minimum temperature observed in the last 24 hours. <i>The minimum temperature <b>must be equal to or lower than the dry bulb temperature (Dry Tmp field) at observation time.</b></i>
RH% Max (maximum observed relative humidity percentile)	Enter the maximum relative humidity observed in the last 24 hours, a value from 1 to 100. <i>The maximum relative humidity <b>must be equal to or higher than the reported or calculated relative humidity at observation time.</b></i>
RH% Min (minimum observed relative humidity percentile)	Displays the minimum relative humidity observed in the last 24 hours, a value from 1 to 100. <i>The minimum relative humidity <b>must be equal to or lower than the reported or calculated relative humidity at observation time.</b></i>
Dur (precipitation duration)	Displays the duration of precipitation in hours, as observed in the last 24 hours.
Amt (precipitation amount)	Displays the cumulative precipitation amount observed in the last 24 hours, in the format 9.99, or "T" for trace.
Y L (yesterday's lightning - required)	Displays the lightning activity level from midnight yesterday to midnight last night: <b>Code</b> <b>Description</b> <hr/> <ul style="list-style-type: none"><li>1    no thunderstorms or building cumulus clouds</li><li>2    infrequent lightning, few building cumulus</li><li>3    occasional lightning, scattered cumulus</li><li>4    frequent lightning, cumulus to 1/3 area</li><li>5    frequent and intense lightning, cumulus common</li><li>6    dry lightning, low lightning flash rate, scattered towering cumulus, with virga.</li></ul> <i>This field must not be blank.</i>
FHC Rsk (forecasted human-caused risk)	Displays the forecasted human-caused risk (HCR) factor for the station, a value from 0 to 100. <i>For more information, refer to Deeming, INT-39.</i>
W F (wet fuels)	Displays the state of the fuel for the observation time. Y, indicates wet fuels N, indicates dry fuels. <i>If the state of the weather code (W field) is 5, 6, or 7 the Wet Fuels field defaults to "Y." For more information about wet fuel descriptions, see Appendix E, "NFDRS technical reference."</i>

Additional RAWS-related fields	
RGauge (rain gauge)	Displays the cumulative rainfall since the rainfall was zeroed out in the RAWS station.
BVlt (battery voltage)	Displays the current voltage of the battery in the RAWS station.
BPress (barometric pressure)	Displays the barometric pressure measured in the last 24 hours.

### To enter a new observation

From the Create Observation form:

1. In the *Station ID:* field, type the **number of the station** for the new observation and press <TAB>.

or

In the *SIG:* field, type the **Special Interest Group name** and press <TAB>.

2. In the *Date:* field, type the **observation date** and press <NEW LINE>.

The Create Observation form redisplay, listing the station number, observation time, and default observation type.



*If you are not authorized to enter observations for a station, that station number does not display on the Create Observations form.*

3. Complete the remaining fields in the form, as instructed on page 7.6. Press <TAB> after each entry.

<p><b>A L</b> (forecasted afternoon's lightning)</p>	<p>Displays the forecasted afternoon lightning activity level:</p> <table border="1"> <thead> <tr> <th><b>Code</b></th> <th><b>Description</b></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>no thunderstorms or building cumulus clouds</td> </tr> <tr> <td>2</td> <td>infrequent lightning, few building cumulus</td> </tr> <tr> <td>3</td> <td>occasional lightning, scattered cumulus</td> </tr> <tr> <td>4</td> <td>frequent lightning, cumulus to 1/3 area</td> </tr> <tr> <td>5</td> <td>frequent and intense lightning, cumulus common</td> </tr> <tr> <td>6</td> <td>dry lightning, low lightning flash rate, scattered towering cumulus.</td> </tr> </tbody> </table>	<b>Code</b>	<b>Description</b>	1	no thunderstorms or building cumulus clouds	2	infrequent lightning, few building cumulus	3	occasional lightning, scattered cumulus	4	frequent lightning, cumulus to 1/3 area	5	frequent and intense lightning, cumulus common	6	dry lightning, low lightning flash rate, scattered towering cumulus.																						
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Dur1 (first 16 hours of forecasted precipitation)	Displays the forecasted duration of precipitation, in hours, from 1:00 pm to 5:00 am (1300 to 0500).														
Dur2 (next 8 hours of forecasted precipitation)	Displays the forecasted duration of precipitation, in hours, from 5:00 am to 1:00 pm. (0500 to 1300).														
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W F (wet fuels)	<p>Displays the forecasted state of the fuel:  Y, indicates wet fuels  N, indicates dry fuels.</p> <p><i>If the state of the weather code (W field) is 5, 6, or 7 the Wet Fuels field is set to "Y." For more information about wet fuel descriptions, see Appendix E, "NFDRS technical reference."</i></p>														

### To display a point forecast

From the Display Point Forecast form:

1. In the *Station ID:* field, type the **number of the station** for the forecast you want to display and press <TAB>.

or

In the *SIG:* field, type the **Special Interest Group name** and press <TAB>.

2. In the *Date:* field, type the **forecast date** and press <TAB>.

Dry Tmp (dry bulb temperature)	Displays the forecasted dry bulb temperature in degrees. <i>Fahrenheit or Celsius is specified in the Temperature Code field in the station catalog.</i>
RH% (forecasted relative humidity percentile)	Displays the forecasted relative humidity percentile.
A L (forecasted afternoon's lightning)	Displays the forecasted afternoon lightning activity level: <b>Code</b> <b>Description</b> 1   no thunderstorms or building cumulus clouds 2   infrequent lightning, few building cumulus 3   occasional lightning, scattered cumulus 4   frequent lightning, cumulus to 1/3 area 5   frequent and intense lightning, cumulus common 6   dry lightning, low lightning flash rate, scattered towering cumulus, with virga.
Wind Sp (wind speed)	Displays the forecasted ten-minute wind speed.
10 Hr (ten-hour fuel stick moisture content)	Displays the forecasted ten-hour fuel stick moisture content. <i>For type 4 and type 6 stations, this field displays a forecasted 10-hour value based on the calculated 10-hour fuel stick moisture content as adjusted by the trend forecast.</i>
Temp Max (24-hour forecasted maximum temperature)	Displays the maximum forecasted temperature for the next 24 hour.
Temp Min (24-hour forecasted minimum temperature)	Displays the minimum forecasted temperature for the next 24 hour.
RH% Max (maximum forecasted relative humidity percentile)	Displays the maximum forecasted relative humidity percentile for the next 24 hour.
RH% Min (minimum forecasted relative humidity percentile)	Displays the minimum forecasted relative humidity percentile for the next 24 hour.
Dur1 (first 16 hours of forecasted precipitation)	Displays the forecasted duration of precipitation, in hours, from 1:00 pm to 5:00 am (1300 to 0500).
Dur2 (next 8 hours of forecasted precipitation)	Displays the forecasted duration of precipitation, in hours, from 5:00 am to 1:00 pm. (0500 to 1300).

<b>T L</b> (today's forecasted lightning)	Displays today's lightning activity level, from midnight to midnight: <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"><u>Code</u></th> <th style="text-align: left;"><u>Description</u></th> <th style="text-align: left;"><u>Code</u></th> <th style="text-align: left;"><u>Description</u></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>no thunderstorms</td> <td>2</td> <td>few building cumulus</td> </tr> <tr> <td>3</td> <td>scattered cumulus</td> <td>4</td> <td>cumulus to 1/3 area</td> </tr> <tr> <td>5</td> <td>cumulus common</td> <td>6</td> <td>scattered towering cumulus.</td> </tr> </tbody> </table>	<u>Code</u>	<u>Description</u>	<u>Code</u>	<u>Description</u>	1	no thunderstorms	2	few building cumulus	3	scattered cumulus	4	cumulus to 1/3 area	5	cumulus common	6	scattered towering cumulus.
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### To display a trend forecast

From the Display Trend Forecast form:

1. In the *SIG:* field, type the **public Special Interest Group name** and press <TAB>.
2. In the *Date:* field, type the **forecast date** and press <TAB>.
3. In the *Time:* field, type the **forecast time** and press <NEW LINE>.

*You may leave this field blank.*

The Display Trend Forecast form redisplay listing the SIG, valid forecast date and time, and other forecast information for that SIG.

4. To return to the previous menu, press <F11>.

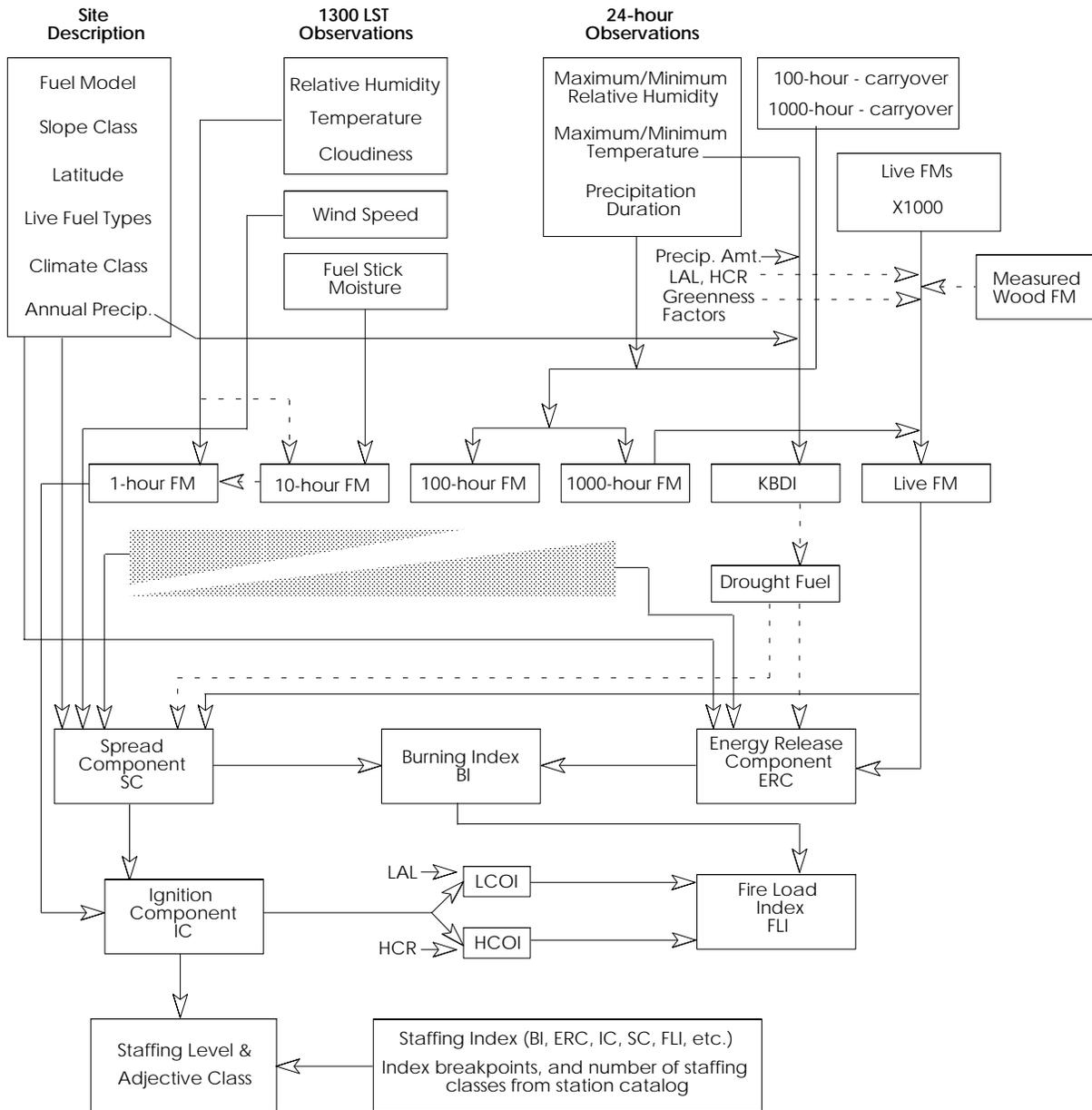
## Appendix E. NFDRS technical reference

Use this appendix as a reference for National Fire-Danger Rating System (NFDRS) technical information. Topics in this appendix include:

- ◆ U.S. NFDRS structure
- ◆ NFDRS weighted averages
- ◆ Adjective (Public) Fire Danger - Rating
- ◆ Staffing Level
- ◆ Lightning Activity Levels
- ◆ recalculating NFDRS indices
- ◆ live fuels
- ◆ NFDRS climate classes
- ◆ standard Shef code descriptions.

# U.S. NFDRS structure

The diagram below shows the NFDRS structure for both the 1978 and 1988 fuel models.



The shaded wedges show the contribution of dead fuel moisture to Spread Component (SC) and Energy Release Component (ERC). Based on either the 1978 or 1988 fuel model, the dashed lines show optional paths through the NFDRS system.

## Adjective (Public) Fire-Danger Rating

In March 1974, Forest Service, BLM, and State Forestry representatives established a standard fire-danger rating for public information.



*Most fire protection organizations use this adjective class **only** for public information. Staffing level (SL) is used for in-house fire preparedness and dispatch information.*

Using the weighted average IC, the weighted SL, and the adjective fire-danger matrix, WIMS determines the weighted adjective fire-danger rating (R) for public use within a geographic area. Adjective fire-danger is expressed as one of five levels:

- ◆ Low (L)
- ◆ Moderate (M)
- ◆ High (H)
- ◆ Very High (V)
- ◆ Extreme (E).

The table below shows the adjective fire-danger for IC and SL:

Staffing level (SL)	Adjective fire-danger (R)				
0	0	0	0	0	0
1-, 1, 1+	L	L	L	M	M
2-, 2, 2+	L	M	M	M	H
3-, 3, 3+	M	M	H	H	V
4-, 4, 4+	M	H	V	V	E
5	H	V	V	E	E
Ignition component (IC)	0-20	21-45	46-65	66-80	81-100



*The zero value is shown to address those cases where a staffing level of “0” is calculated by WIMS. This occurs when the wet fuels flag (WF) is set to “Y” during an Observed (Type=O), Special (Type=S), or Forecast (Type=F) observation.*

## To determine the historic occurrence of the adjective fire-danger

- ◆ Using the SEASON module of the FIRDAT program, analyze the historic weather data housed in the NIFMID database.



*SEASON is available using KCFAST. It is also available in a PC version. For information about the SEASON module, refer to GTR-NE-138. For more information about KCFAST, contact your WIMS system administrator.*

The following table contains the narrative descriptions and color codes for the five adjective fire-danger classes:

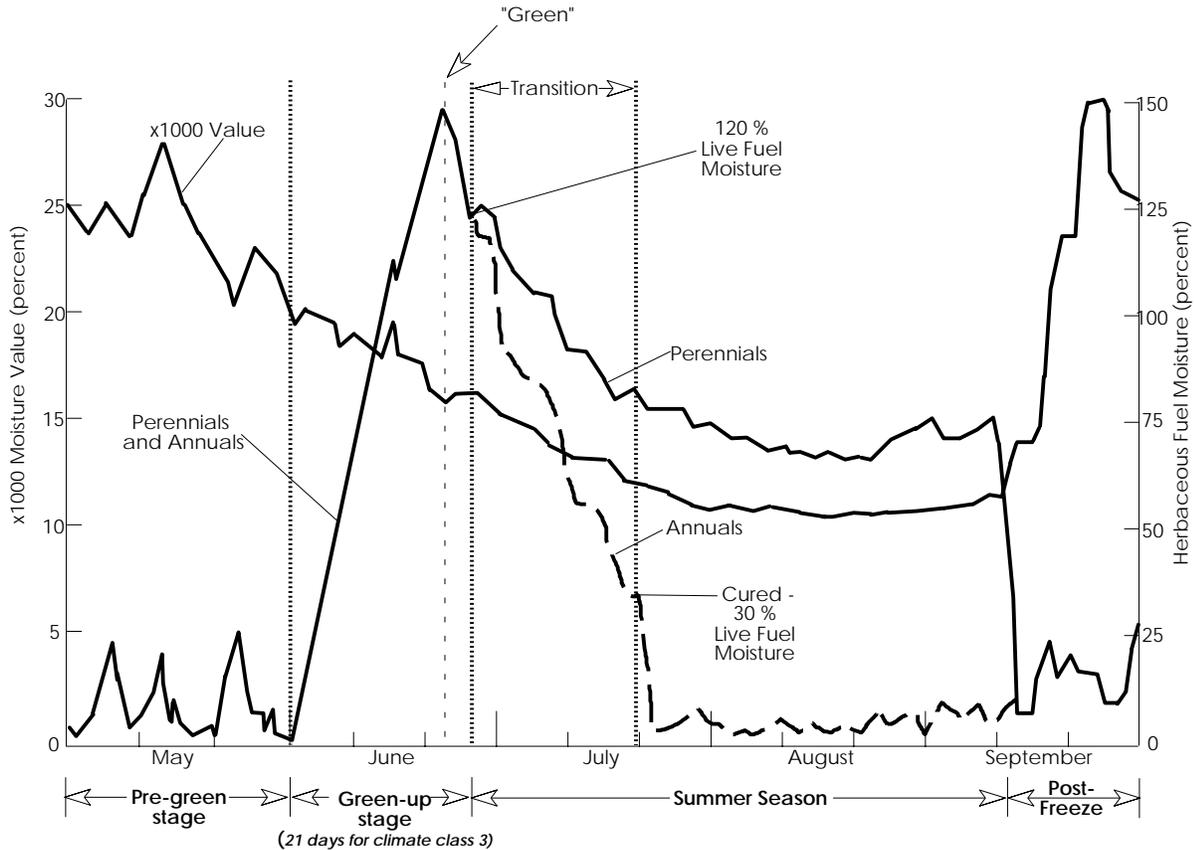
Fire-Danger Class Color code	Description
Low Green	Fuels do not ignite readily from small firebrands, although a more intense heat source, such as lightning, may start many fires in duff or punky wood. Fires in open cured grassland may burn freely a few hours after rain, but woods fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting.
Moderate Blue	Fires can start from most accidental causes, but with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grassland will burn briskly and spread rapidly on windy days. Woods fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious, and control is relatively easy.
High Yellow	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes, or in concentrations of fine fuel. Fires may become serious and their control difficult, unless they are hit hard and fast while small.
Very High Orange	Fires start easily from all causes, and immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high-intensity characteristics; such as long-distance spotting and fire whirlwinds, when they burn into heavier fuels. Direct attack at the head of such fires is rarely possible after they have been burning more than a few minutes.
Extreme Red	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high-intensity burning will usually be faster and occur from smaller fires than in the very high danger class. Direct attack is rarely possible, and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions, the only effective and safe control action is on the flanks until the weather changes or the fuel supply lessens.



**Remember, adjective fire-danger is for public information only. It has no direct connection to fire behavior.**

## x1000, Annual, and Perennial herbaceous fuel moisture models

The diagram below shows the relationship between the x1000 value and the annual and perennial herbaceous moisture models.



As shown above, when the greenup date is set for a station there is a dramatic change in the *Perennial* and *Annual* herbaceous fuel moisture models. During the first part of this *Transition* period, the *Annual* and *Perennial* herbaceous fuel moisture models lose moisture at the same rate until they reach 120 percent. From 120 to 30 percent, the *Annual* herbaceous fuel moisture decreases faster than *Perennial* herbaceous fuel moisture.

## Greenness factors during dry periods

The table below shows some suggested greenness factors in relation to KBDI values:

KBDI value	greenness factor	KBDI value	greenness factor
0-200	20	401-420	9
201-220	19	421-440	8
221-240	18	441-460	7
241-260	17	461-480	6
261-280	16	481-500	5
281-300	15	501-520	4
301-320	14	521-540	3
321-340	13	541-560	2
341-360	12	561-580	1
361-380	11	581+	0
381-400	10		

## Setting the greenup date for a station

The stage of herbaceous vegetation controls two sets of fuel moistures:

- ◆ Herbaceous fuel moisture is affected by *transition* (*HS* field = T) and *cured* (*HS* field= C) stages. Unless frozen, perennial herbaceous fuels can recover from a cured stage after receiving moisture.
- ◆ Woody fuel moisture is affected by a *frozen* (*HS* field = F) state. Woody fuels must be frozen prior to greenup.

The *Greenup Date* field on the Display/Edit Default NFDRS Parameters form (*FASTPATH: ENFDR*) identifies the date at the start of greenup. The *Herb Date* field reflects the date the last change was made to the *HS* field (herbaceous vegetation stage code). Determine the value of the *HS* field on the Display/Edit Default NFDRS Parameters form, then follow the procedure on the next page.



*For more information about editing NFDRS parameters, see “Editing NFDRS parameters” in Chapter 6, “Working with Station Information.”*

## Failure to reset herbaceous values at the start of the season

In most areas of the country, there is a period of time when fire danger becomes low and NFDRS is not operated on a daily basis. This is the period between fire seasons when the NFDRS model lays *dormant*. In the West, this is usually winter and spring months. In the South and Northeast this period may be different, and the length of this period of inactivity varies by latitude and longitude. One of the most common errors is failure to reset the live vegetation conditions to match the local conditions at the time you resume entering observed weather data.



*Monitor the herbaceous values throughout the fire season to ensure they reflect current conditions.*

*For more information, see “Setting the greenup date for a station,” in Appendix E, “NFDRS technical information.”*

## Wrong grass type or climate class selected

An important difference in some fuel models is its associated grass type and the general climatic condition that it occurs in. The growing season's length varies by the pattern of precipitation. Similarly, the way annual and perennial grasses and forbs respond to precipitation patterns are different. Make sure you select the correct combination of grass type and climate class when you assign your fire danger rating stations.

## Fuel sticks are too old

Fuel sticks are used to measure the moisture content of the 10-hour fuels at manual stations. Exposure of wood dowels to environmental factors affects the accuracy of the change. A WIMS aging algorithm adjusts the measured value of the fuel sticks to a more representative value, but there are practical limits to the accuracy of this algorithm. To ensure a representative 10-hour fuel moisture value, change the fuel sticks every 30 days and enter the new fuel stick date in WIMS.

## Breakpoint values are not consistent with the staffing indices

To establish climatic breakpoints for your staffing classes, enter values for the selected NFDRS indices that correspond to your agency's staffing policies. When designating an NFDRS index for staffing classes, use the same NFDRS index for your FIREFAMILY run. An error will otherwise result.

## Wrong values used for staffing level breakpoints

These values used in NFDRS determine the staffing levels and adjective ratings for your area. In most cases, these may be determined from historic data taken at or near the appropriate station. Local agency policy determines which percentile breaks to use. To determine the values associated with the selected percentile breakpoints, use FIREFAMILY and historic weather information. The more years of record you use will result in better values. If you are consistently operating in extreme conditions or rarely get out of the low staffing class, you may want to review the break points you are using.

## Solving problems - classroom examples

The examples below will help you understand and tune NFDRS values. You may be able to apply these examples to specific situations in your area.

### Example 1

You have a question about the live fuel moisture values for station 040608. It is late June and you have had a warm damp spring. You started greenup for the station on March 20th and began entering observations on May 29th. The herbaceous fuel moisture values have continued to drop throughout June and have reached what you would normally expect for late July. By accessing the Display NFDRS (Index) and Edit Stations (ESTA) forms, review the live fuel moisture values being generated by WIMS for station 040608 on June 30th. What might be the cause of your problem? How would you correct it?