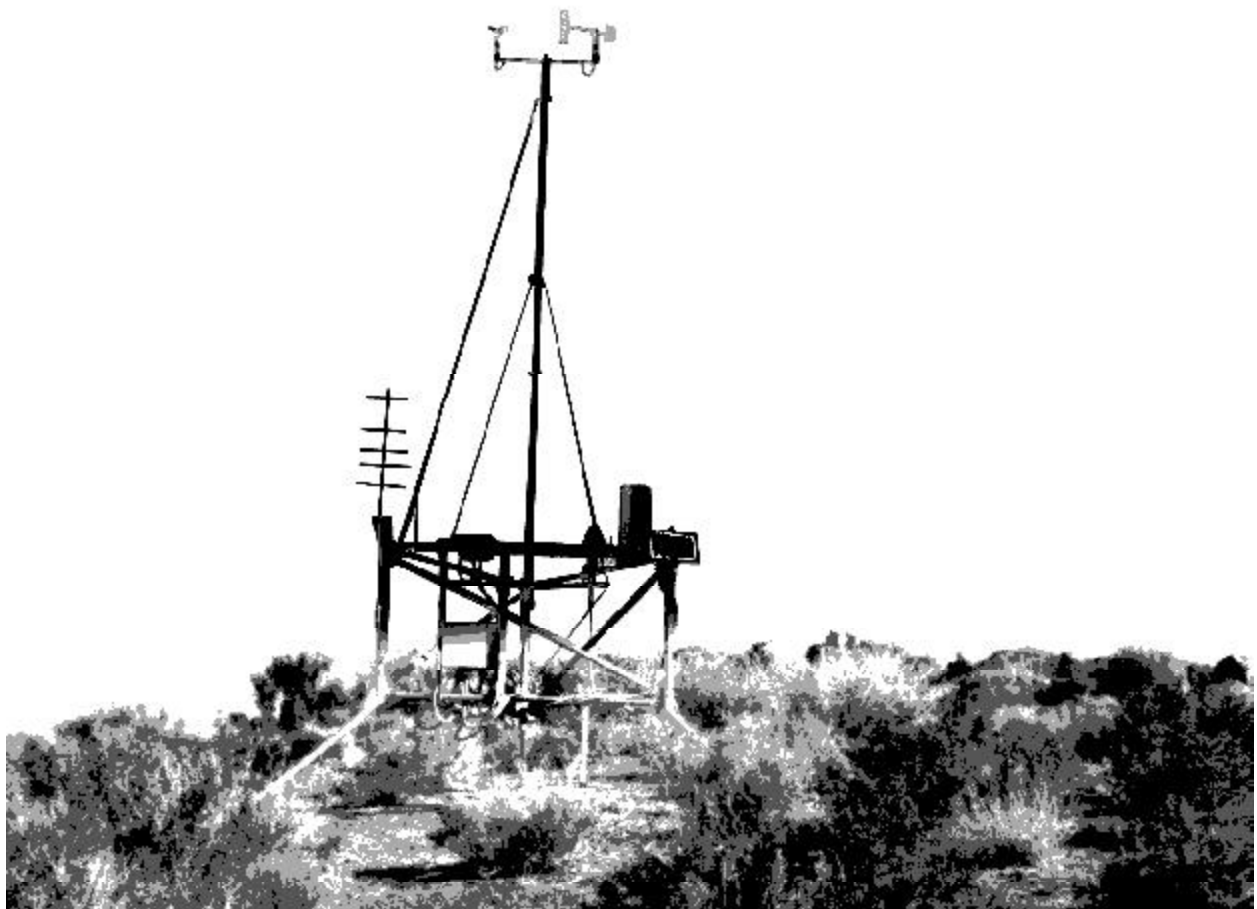


# Intermediate National Fire Danger Rating System S-491



NFES 2693

Prequalifying Work  
AUGUST, 2003



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## COURSE DESCRIPTION

Intermediate National Fire Danger Rating System, S-491 is an instructor-led course intended to be presented at the geographic area level. This course is designed to support the training requirements of the Wildland and Prescribed Fire Qualification Guide, PMS 310-1. The course lessons and exercises support training for dispatchers and others charged with editing and inputting weather information into WIMS used for NFDRS calculations, fire management staff who apply NFDRS outputs to decision making, and fire behavior specialists who incorporate NFDRS products into assessments and projections.

## COURSE OBJECTIVE

Upon completion of this course the student will demonstrate the knowledge and skills necessary to operate, apply, and manage the National Fire Danger Rating System.

## STUDENT PREREQUISITES

- Demonstrate at least intermediate skills with the current Windows™ operating system
- Possess a valid Weather Information Management System (WIMS) logon identification
- Have successfully completed Intermediate Wildland Fire Behavior, S-290
- Successfully complete the prequalifying work with a minimum passing score of 70% or higher

and ideally, one of the following experience requirements:

- Two seasons working with NFDRS inputs or outputs (Fire Program Management career path students), or
- Two seasons inputting weather observations into WIMS (fire dispatch career path students), or
- Currently qualified as Division/Group Supervisor (DIVS) for FBAN, or Fire Effects Monitor (FEMO) and Prescribed Fire Burn Boss Type II (RXB2) for LTAN (fire behavior career path students).

In addition, it is **highly desirable** that all students have working knowledge and experience using either the Weather Information Management System (WIMS) or one of the private vendor NFDR processors.

**NOMINEES ARE HIGHLY ENCOURAGED TO READ THE FIRST THREE CHAPTERS OF THE FIREFAMILY PLUS USER'S GUIDE TO DEVELOP INTRODUCTORY KNOWLEDGE OF THE SOFTWARE'S PURPOSE AND FUNCTION.**

The course coordinator has established enough time to contact you about the course requirements and deadline for return of completed prequalifying work; for the cadre to grade completed prequalifying work results; and notify you of selection or non-selection for the classroom portion of the course.

The combined minimum passing score for all prequalifying work quizzes is 70%. Generally, only the top 20-25 passing scores received from nominees by the prequalifying work return deadline are accepted as students for the classroom portion of the course.

The prequalifying work for S-491 Intermediate National Fire Danger Rating System consists of the following components:

- FAMWEB and KCFAST - A brief discussion of the features of the FAMWEB and KCFAST programs as they apply to NFDRS. The tutorial guides the student through the process of setting up their user profile.
- WIMS for Beginners - A tutorial that walks the student through basic WIMS functions and describes their application. By searching through WIMS functions, the student prepares for accessing and manipulating weather files for course exercises. The tutorial also provides confirmation that the student possesses the required FAMWEB Logon ID.
- Gaining an Understanding of the NFDRS - The publication provides the background needed to prepare the student on the history, components, maintenance and application of the National Fire Danger Rating System. The quiz insures that the student has read the publication and is familiar enough with NFDRS terms to succeed with course lessons and exercises.
- Fuels and Fuel Moisture Review - A review of fuel types, fuel beds and the dynamics of fuel moisture and how they relate to potential fire behavior as learned in the prerequisite S-290 Intermediate Wildland Fire Behavior course. The quiz prepares the student for in depth discussion of fire environment dynamics.
- FireFamily Plus - An introduction to the functionality and application of the FireFamily Plus software used to apply NFDRS to fire business management. Completion of the quiz insures the student has the necessary familiarity with the software to work through course exercises.





## **FAMWEB and KCFAST S-491 Prequalifying Work**

### **OBJECTIVES:**

Upon completion of this lesson, the student will be able to:

- Logon to FAMWEB, change the password for the Logon ID being used, and complete the steps to set up the profile parameters for the user.
- Demonstrate that the student has a WIMS logon ID and has set up their KCFAST profile.

Weather observations are entered into WIMS (Weather Information Management System) for daily fire weather forecasts. The observations are then saved into NIFMID (National Interagency Fire Management Integrated Database) for historical analysis. KCFAST is the application used to retrieve the archived weather observations.

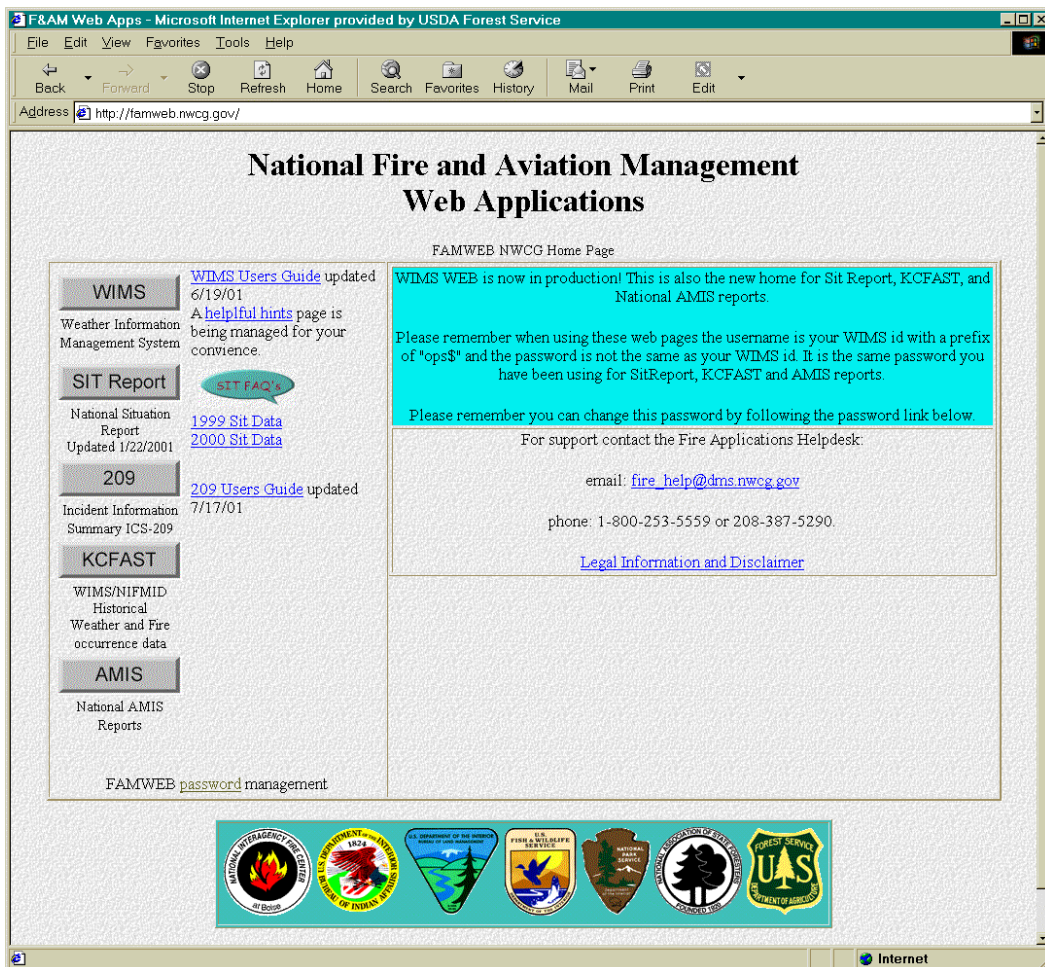
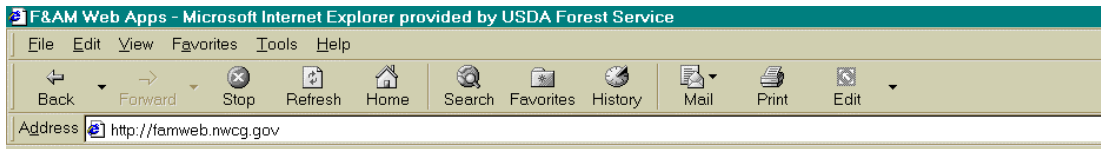
This lesson will provide the tools to allow users to retrieve the archived data to be used for historical analysis in programs like FireFamily Plus. Completing this lesson will ensure you have acquired and updated your WIMS ID in preparation for accessing historical weather files during the classroom portion of the S-491 course.

### **I. THE FAMWEB APPLICATION**

- A. The National Fire and Aviation Management Web Application is housed at NITC (National Information Technology Center) in Kansas City.
- B. KCFAST is used to retrieve weather data and Forest Service fire data from NIFMID (National Interagency Fire Management Integrated Database) housed at NITC (National Information Technology Center).
- C. FAMWEB currently supports five functions: WIMS, Sit Report, ICS-209, KCFAST, and AMIS. In S-491 you will use FAMWEB to access historical weather files from NIFMID using KCFAST.

## D. FAMWEB Requirements

1. A valid logon ID (example: fs4000).
2. An Internet Browser - Internet Explorer or Netscape Navigator.
3. FAMWEB URL: <http://famweb.nwcg.gov>

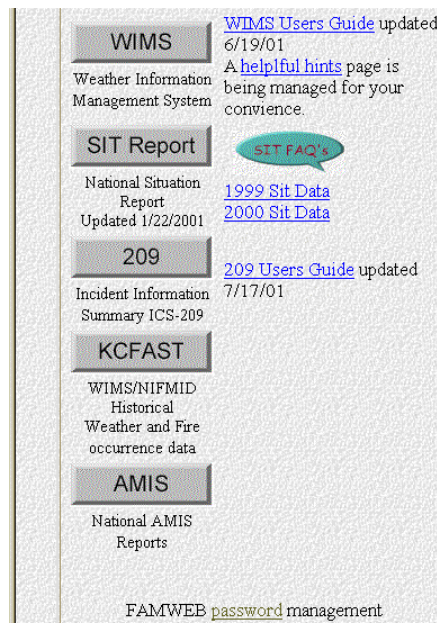


FAMWEB Home Page

## E. Changing Passwords

Before proceeding into KCFAST, users need to understand how to change their passwords.

- Logon ID's and Passwords are case sensitive. Always use lower case characters.
  - It is recommended that passwords be from 6 to 10 characters in length.
  - Passwords should be changed every 30 days.
  - Logon ID/Password combinations changed from the FAMWEB home page are good for each of the applications that are hosted on the FAMWEB page.
1. Changing passwords: On the main page, click on the FAMWEB password management link to change the user password.



2. The user needs to click on the link. The user will be prompted for the logon ID (example: fs4000) and the existing password. Click OK.

**Enter Network Password**

Please type your user name and password.

Site: famweb.nwcg.gov

Realm: nifmid

User Name: fs8418

Password: \*\*\*\*\*

Save this password in your password list

OK Cancel

The initial KCFASST password ID for all users is “kcfst”, and should be changed to establish user profile security. If the user is using a borrowed user ID, the password may already have been changed from the default, or one used for the SIT program. The password they will be using then is the SIT password or the password that was identified when the password was previously changed. Password changes affect all of the applications that reside on FAMWEB.

***FAMWEB Password Changing Page***

You may change your password at this point.  
If you do not wish to change your password, press the CONTINUE button.

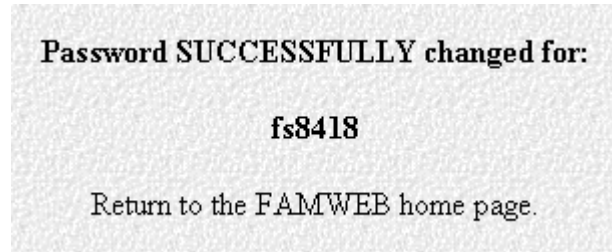
Please enter your new password. Then re-enter your new password to confirm the change.

New password:

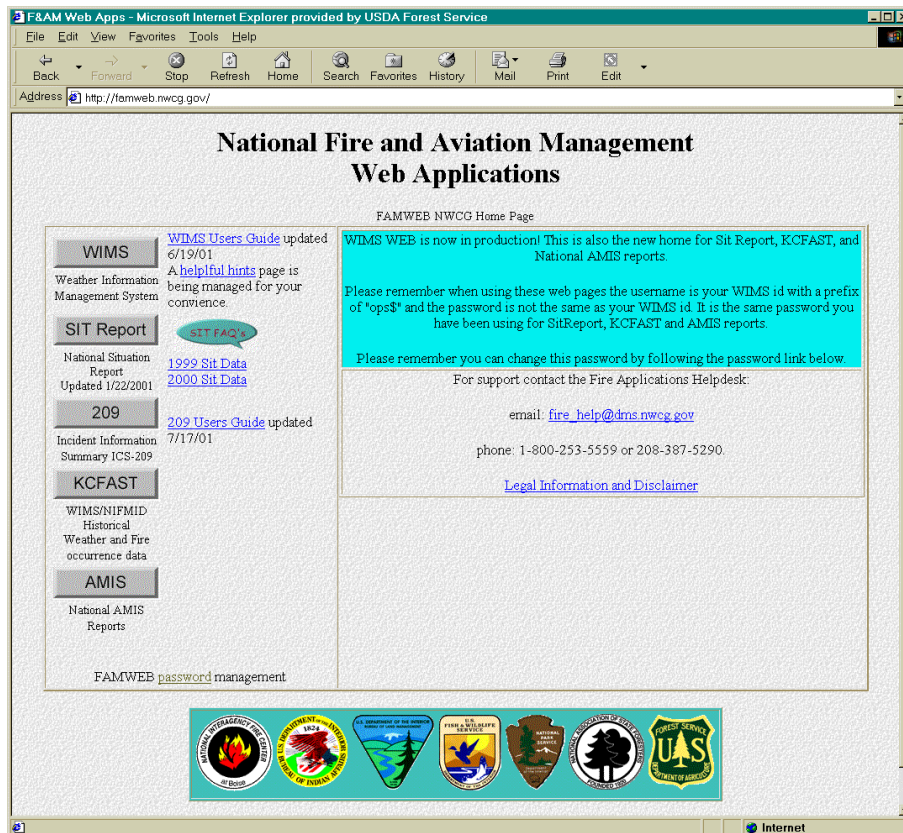
Re-enter new password:

When you return to any of the pages in the FAMWEB application list,  
you will need to logon with this new password.

- The user will then be prompted to enter a new password and to verify the new password. After the new password has been entered click on submit to save the changes.

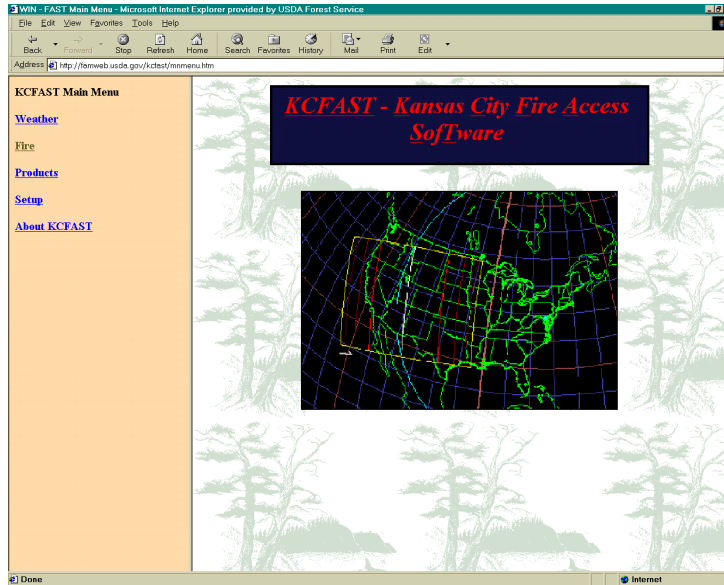


- A message will be displayed verifying the change of the password. Click on the Return to the FAMWEB home page link to continue using FAMWEB.

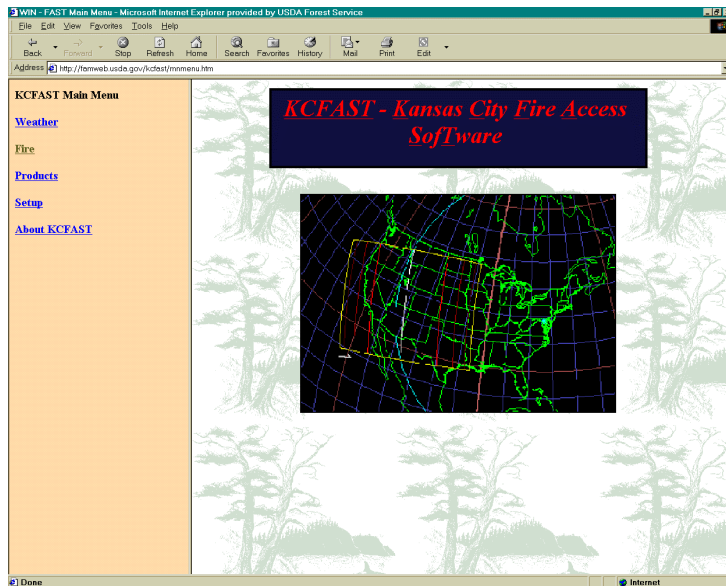




F. Click the KCFAST button to enter KCFAST.



The KCFAST main menu is displayed.



G. Profile setup. The *first time* one logs on to KCFAST, setting up the profile parameters is required. Complete the following steps to set up the profile.

1. From the KCFAST Main Menu click on Setup.

***KCFAST - Kansas City Fire Access Software***

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**User Profile Information**

Email address

FTP site

FTP directory path

The default FTP site IP address is 'ftp2.fs.fed.us'  
The default directory path for the above site is 'incoming/wo\_fam'  
Valid email addresses consist of a login name,  
followed by the character '@', followed by a machine name,  
for example, 'ksmkcybean@fs.fed.us'.

---

2. The User profile information is entered. Enter your email address. The default ftp site address will display. (199.128.173.130) This is the Forest Service Anonymous FTP site. In the directory path enter /incoming/wo\_fam and click submit. If a user has a different anonymous ftp site preference, such as the anonymous NPS ftp site, enter the information in this screen.
3. A user setup confirmation screen will display with the information just entered.
4. A user profile information screen using the letter version of the IP address for the Forest Service Anonymous FTP site. **ftp2.fs.fed.us.**

5. Click the Submit button to receive profile confirmation.
6. The KCFAST User Confirmation screen showing the letter version of the IP address for the Forest Service Anonymous FTP site.



**Print a screen capture of the KCFAST USER SETUP CONFIRMATION window and return it with your prequalifying work package.**

Password and Profile Review:

- The password selected for KCFAST is good for all of the applications hosted on FAMWEB.
- The password and logon ID are case sensitive. Always use lower case characters.
- The user may select any FTP site desired.



## **WIMS – for Beginners** **S-491 Prequalifying Work**

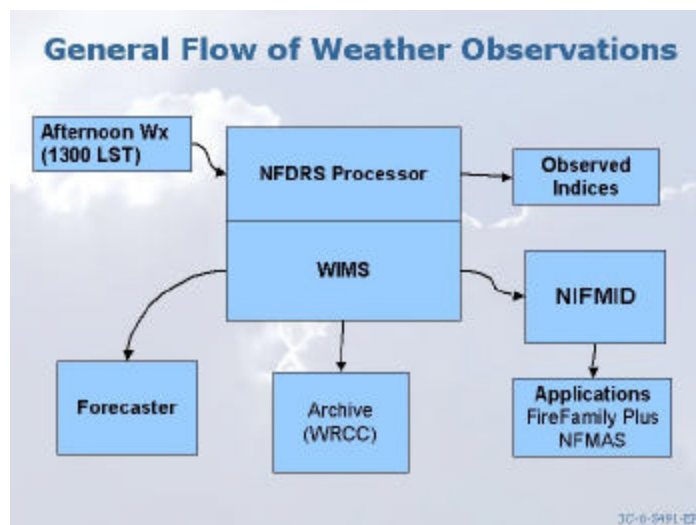
WIMS – Weather Information Management System. WIMS is a web-based application used to collect, store and manage current weather information, as well as providing access to historical weather data.

Weather station site information is saved in station catalogs. Daily observations are used to provide both observed and forecasted indices for National Fire Danger Rating System (NFDRS). The daily observations are archived into the National Interagency Fire Management Integrated Database (NIFMID) for use in historical weather analysis.

Currently there are over 1,700 active stations archived in WIMS that are used to produce NFDRS indices. These stations belong to the Forest Service, Bureau of Land Management, National Park Service, U.S. Fish and Wildlife, Bureau of Indian Affairs, as well as many of the state natural resource departments. Each of the agencies listed use the data in fire management applications. The National Weather Service, state and local fire departments, educational organizations and the private sector also depend on WIMS weather archives.

WIMS allows users to retrieve weather information by providing:

- timely access to many weather information sources
- efficient tools for managing data
- data manipulation and display functions
- an interactive communications environment



Here is a very simple overview of WIMS. WIMS provides users with near real-time access to weather data, so, let's take a look at WIMS from a daily user's point of view. Weather observations are fed into WIMS daily from satellite weather stations, non-satellite telephone telemetered stations, and by users inputting observations for manual stations. Users edit the observations allowing the NFDRS processor to produce fire danger rating indices. Forecasted observations and indices are also produced.

Now you know what WIMS is and what WIMS does, how do you access WIMS?

### **WIMS Access Requirements**

To access WIMS each user must have a Logon ID. A Logon ID may be obtained by completing the form at [www.fs.fed.us/fire/planning/nist/WIMS\\_accessform.rtf](http://www.fs.fed.us/fire/planning/nist/WIMS_accessform.rtf). For Forest Service employees, send the completed form to the Forest Service Security person in each Region. All other agencies can submit the form via fax to the Fire Application Support Help Desk. Contact the Help Desk at 800-253-5559 with any questions.

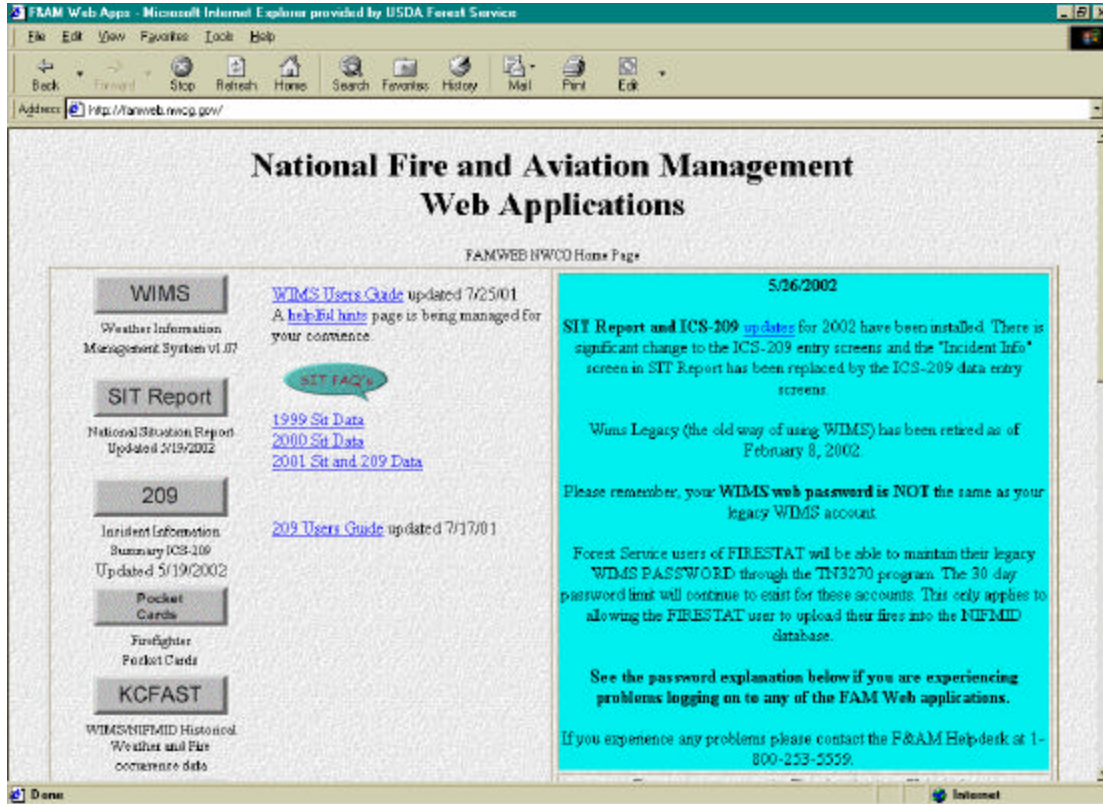
Since WIMS is web-based application a web browser is also required. To access WIMS via the Internet the computer being used must have Netscape 4.7 or later or Internet Explorer 5.0/5.5 or later. For specific directions on browser configuration, see Chapter 3 of the WIMS User Guide at [http://www.fs.fed.us/fire/planning/nist/WIMS\\_web\\_userguide.htm#WIMS%20WEB%20USER%20GUIDE](http://www.fs.fed.us/fire/planning/nist/WIMS_web_userguide.htm#WIMS%20WEB%20USER%20GUIDE). The guide is in a .pdf file or a self extracting file broken into chapters. It is recommended to have a copy of the WIMS User Guide and Gaining an Understanding of the National Fire Danger Rating System (PMS 932, NFES 2665) available when completing this tutorial.

### **Accessing WIMS**

With your WIMS Logon ID and password and access to an Internet browser (see Chapter 3 of the WIMS User Guide for specific browser settings), let's logon to WIMS. Open the browser and type <http://famweb.nwcg.gov> in the address line.



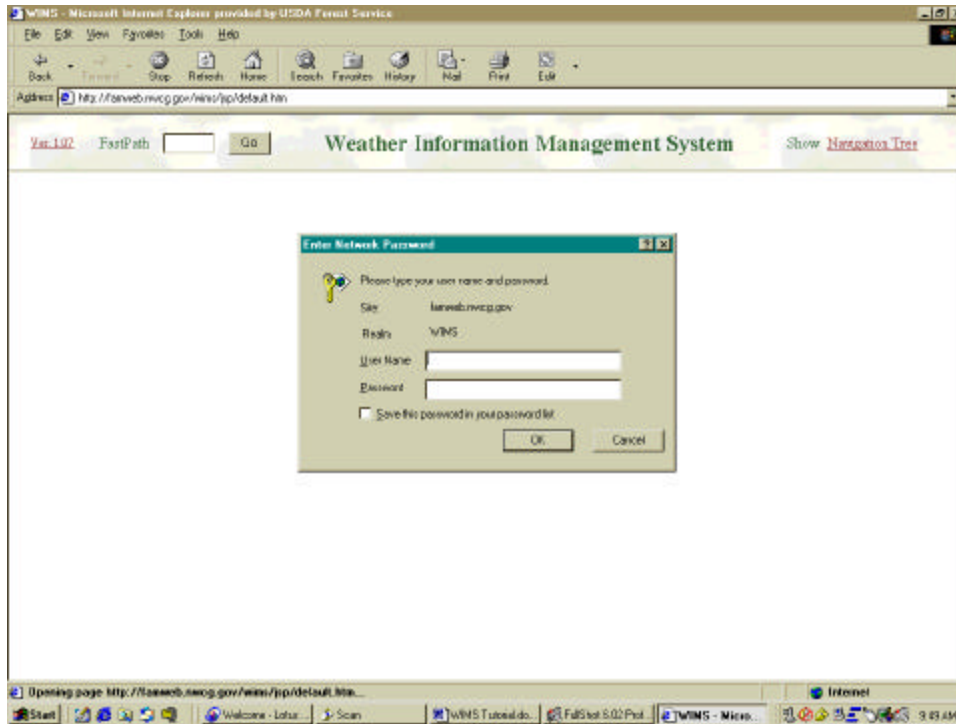
The following screen will be displayed.



There are several applications hosted on Famweb including WIMS, Sit Report, 209, PocketCards, KCFast, AMIS, and Firestat. To enter any of the applications click on the desired button. All of the applications require a Logon ID and password except PocketCards. Software updates and information bulletins are posted in the colored box on the right hand side of the screen. It is always wise to take just a minute and read the info in the colored box. In order to read everything in the box, the user will have to use the scroll bar to view the entire box.

## Logon to WIMS

To access WIMS, click the WIMS button on the FAMWEB Main Menu. The Weather Information Management System screen will open displaying a box requesting a network password.

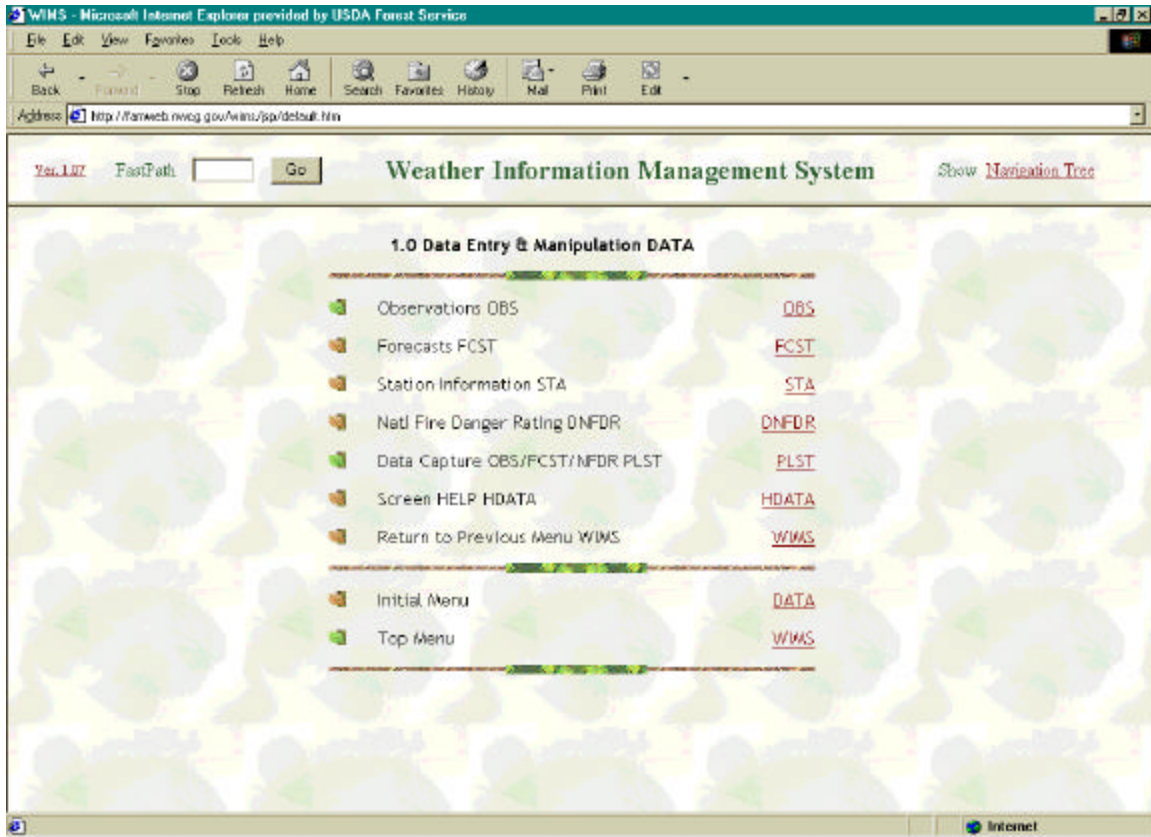


The user must enter their Logon ID User Name box. A password between 6 and 12 characters, containing a mix of alpha and numeric characters must be entered in the Password box. The first character in the password **cannot** be numeric.



After entering the user name and password, click ok.

The WIMS Main Menu will be displayed.



There are two windows used in WIMS. The top window allows users to access the FastPaths and display the Navigation Tree. The bottom window displays the menus and forms used throughout WIMS.

**TASK 1** (Note: these tasks will lead you through WIMS functions to prepare you for the WIMS prequalifying work quiz.)

Logon into WIMS

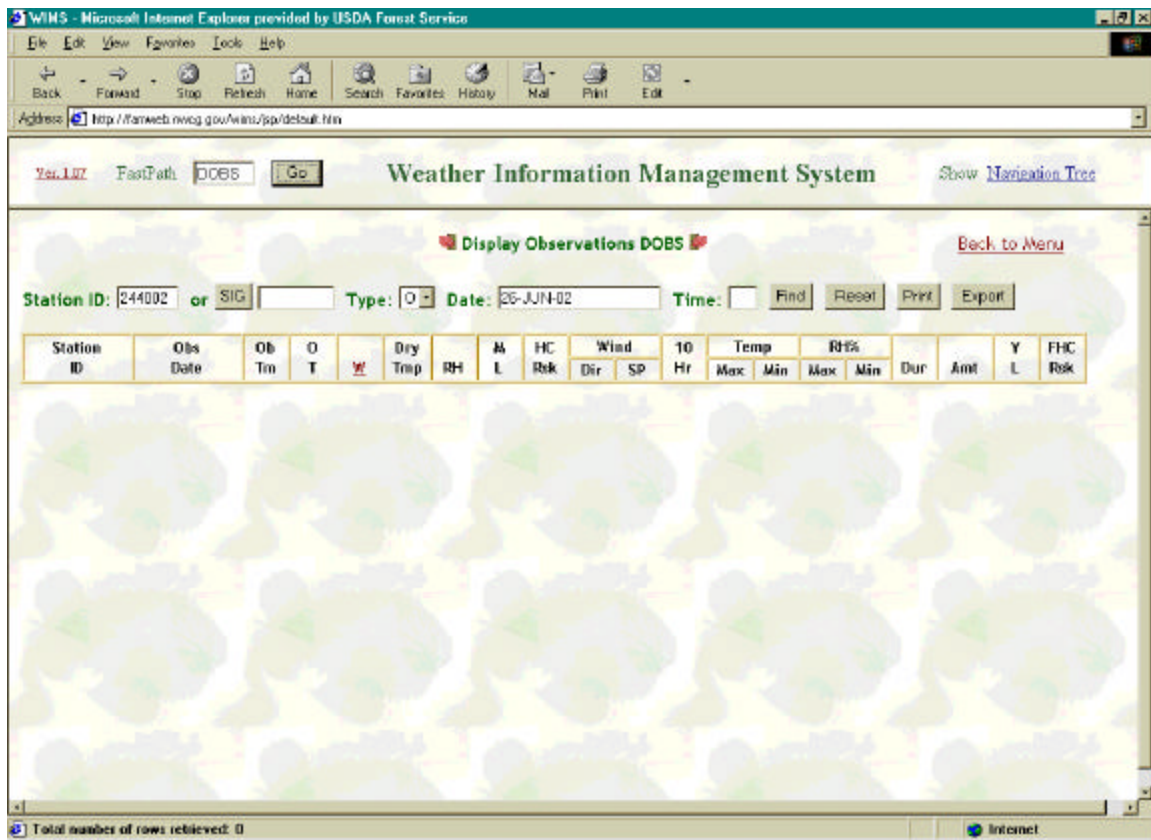
## FastPaths

WIMS uses FastPaths (shortcuts), to allow users to quickly move between screens and functions. The FastPaths each start with a letter that defines the desired function: D = Display, E = Edit, L = List, N = New. The FastPath DOBS will allow a user to view the observations. The FastPath EOBS will allow a user to edit the observations.





To use a FastPath, type the FastPath name into the FastPath box (located in the top window) and click the Go button. The desired screen will be displayed in the bottom window. In this case the FastPath DOBS was entered into the FastPath box. The Display Observations DOBS screen opened in the bottom window.



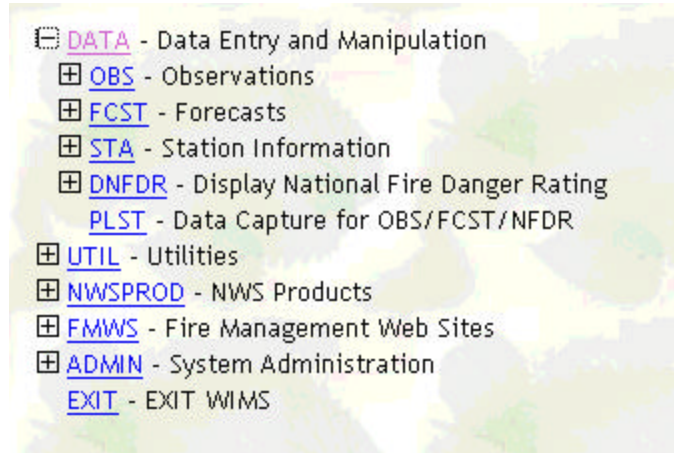
To find a list of FastPaths click on the Show Navigation Tree link in the upper right corner of the top window, as shown below.



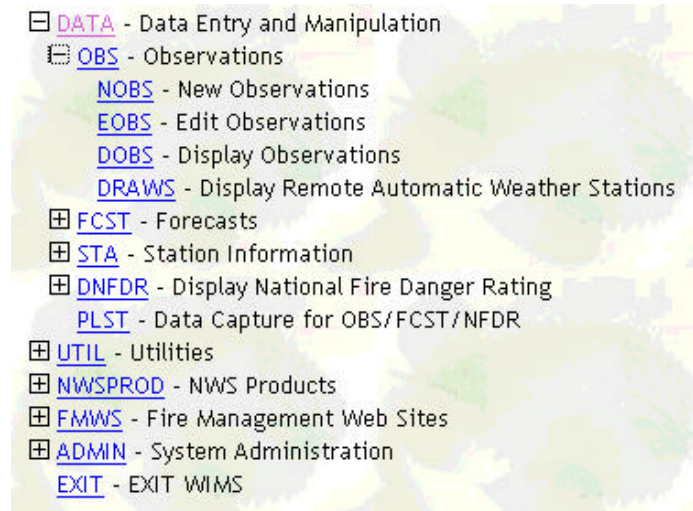
The tree will display in the bottom window. Beside each level there is a plus or a minus symbol. The plus sign means there is more information. The minus signs denote the lowest level of the tree. The following screens illustrate the structure of the tree.



Notice each link has a plus sign beside it. By clicking the plus sign the next level will be displayed. Clicking the link (underlined word) will open the menu associated with each word.



Notice in this example that the plus sign beside the word DATA is now a minus. Below DATA more levels are listed (OBS, FCST, STA, DNFDR, PLST).



Notice under OBS the following FastPaths are displayed: NOBS, EOBS, DOBS, DRAWS. By clicking on any of these the user will be taken to the appropriate screen. The user may also elect to use the FastPath or Navigation Tree option to move about in WIMS.

## TASK 2

Take a few minutes and explore the navigation tree. Note the FastPaths and try using the FastPath option in the top window. Try the following FastPaths: DOBS, LUSER, PROFILE, LSTA, ESTA, DRAWS, DIDX, and DIDM.

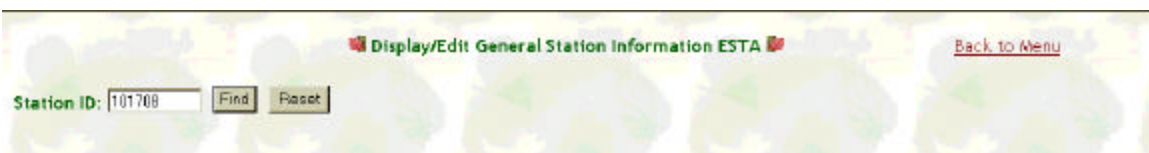
### Station Catalogs

As discussed earlier in this tutorial, WIMS stores and manages current weather information. In order for this to happen a station catalog must be defined in WIMS. The station catalog contains site information specific to a weather station. Each weather station in WIMS has a station catalog.

To view a station catalog use the FastPath ESTA and click Go.

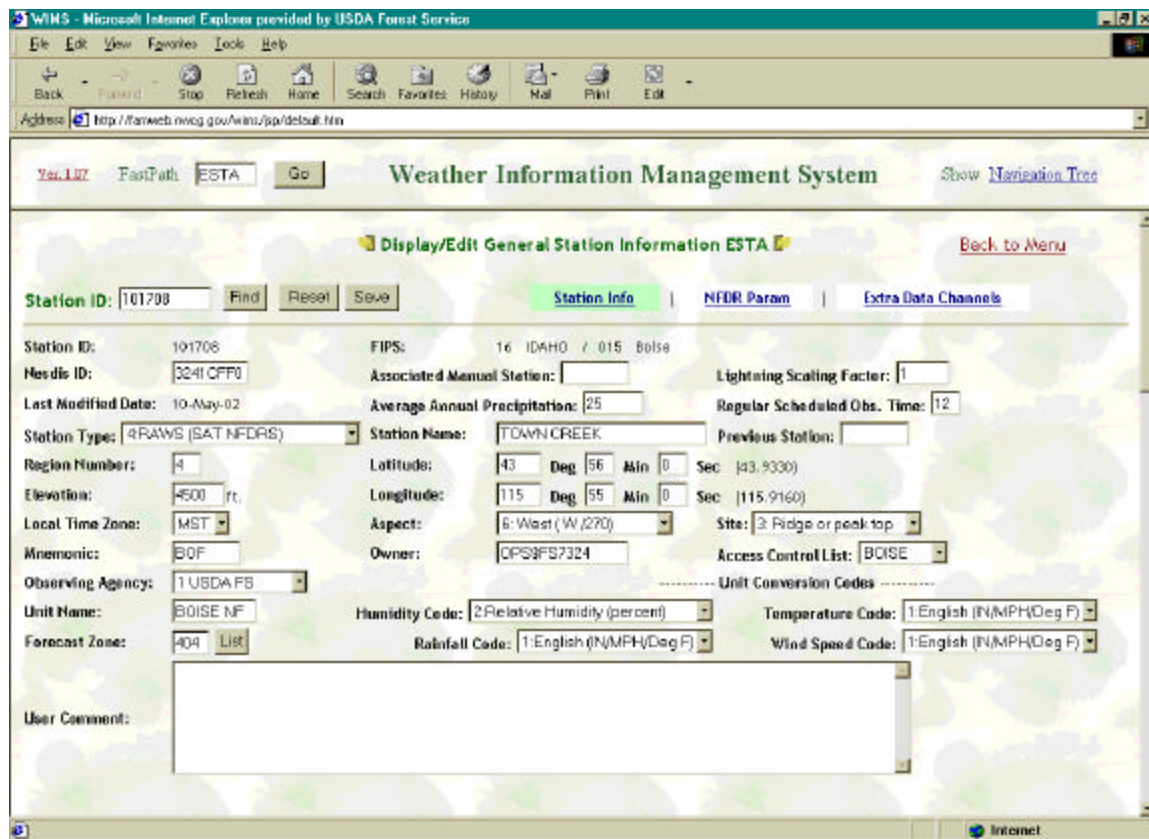


The user will be prompted to enter a Station ID. The Station ID is a unique six digit number assigned by the National Weather Service (NWS). For a list of station ID's in your area, contact your servicing NWS office.



Enter the Station ID and click find.





Notice the three links **Station Info**, **NFDR Param**, and **Extra Data Channels**. Each link represents a portion of the station catalog. Notice in this example that Station Info is highlighted indicating the Station Info portion of the Station Catalog is displayed.

The **Station Info** screen contains specific site information about the weather station. See the WIMS User Guide, Chapter 6 for in depth information and Gaining an Understanding of the National Fire Danger Rating System, Section 1.06, User Controlled Site Descriptors.

**Access Control List** – This is a listing, created by the station owner, giving certain privileges to other WIMS users relative to managing data for the station. Privileges could include editing catalog data, entering new observations or editing existing observations. Without an Access Control List, only the station owner can perform these routines.

## Regular Scheduled Observation Time

WIMS users can choose the specific observation they want to view within a 24-hour period. Times are expressed in military time. Minutes are dropped.

When selecting the RAWS observation to edit for NFDRS calculations, remember that WIMS truncates the minutes from the observation. A RAWS observation taken at 1259 is called a 1200 observation and one taken at 1301 is called a 1300 observation. You need to know when your station data is transmitted to correctly identify the observation to edit for NFDRS calculations. The DRAWS screen displays the observation hour and minutes.

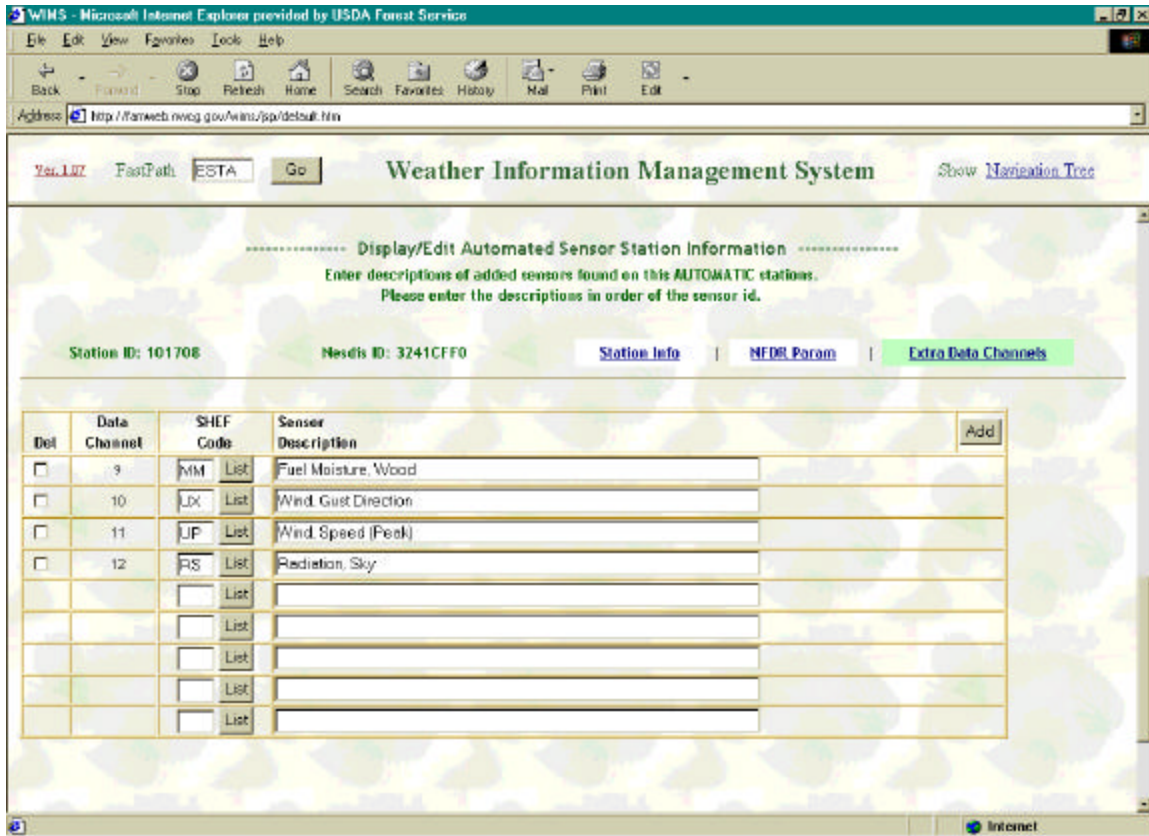
----- Display/Edit Default NFDRS Parameters -----

Station ID: 101708 Effective Date: 28-Jun-02 FindNFDR Station Info NFDR Param Extra Data Channels

7B & 8B NFDRS	100-hr:	9	Measured Woody FM:		Fuel Stick Date:	09-May-02
	1000-hr:	12	Woody Measured Date:		Stick Age (Days):	1
8B NFDRS	1hr-10hr:	<input type="checkbox"/>	KBDI:	244	Greenness Factor	
	Season Code:				Herb:	<input type="checkbox"/>
					Shrub:	<input type="checkbox"/>

D e l	P r i	ID	H S	Herb Date	Greenup Date	8B s b	S l p	G r s	C l	Herb FM	Woody FM	X-1000	Staffing ldx Breakpoints					
													SI	DC	Low S1%	Low Vol	High S1%	High Vol
<input type="checkbox"/>	1	7G	T	03-Jun-02	10-May-02		3	P	3	79	83	12	5	5	90	09	87	80
<input type="checkbox"/>	2	7C	T	03-Jun-02	10-May-02		3	P	3	79	83	12	5	5	90	30	87	35
<input type="checkbox"/>	3	7H	T	03-Jun-02	10-May-02		3	P	3	79	83	12	5	5	90	39	87	47
<input type="checkbox"/>																		

The **NFDR Param** screen contains the specific information required by WIMS to perform NFDRS calculations and produce NFDRS outputs. For specific details see the WIMS User Guide, Chapter 6 to create and edit the NFDRS parameters and Gaining an Understanding of the National Fire Danger Rating System, Section 1.06, User Controlled Site Descriptors.



The **Extra Data Channels** link displays any sensors on the station that are not part of the standard sensor complement. There are eight standard data channels not listed on this page. See the WIMS User Guide, Chapter 6 for more information. To see a complete list of SHEF (sensor) codes click the List button in this screen.

### TASK 3

Using the FastPath ESTA, view the station catalog for Station ID 101221.

1. What is the station type?
2. Are there other station types?
3. Does the station catalog contain Latitude and Longitude?
4. Where does one look to find out which Agency owns a station?
5. Where does one look to find out the individual owner of the station?

Using the link [NFDR Param](#) answer the following questions.

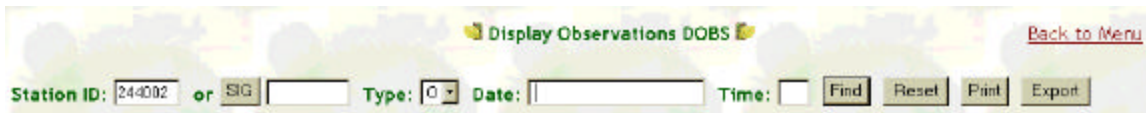
1. What fuel model(s) are shown?
2. What is the last green-up date?
3. What is the slope class?
4. What is the climate class?

Using the link [Extra Data Channels](#) answer the following questions:

1. What is the SHEF Code RD?
2. How many standard sensors or data channels are there on each station?

## Query Blocks

A query block is a portion of a form that contains a group of related fields used to retrieve data. In WIMS, the query block is the top portion of the form. For example, the top portion of the Display Observations form shows the Station ID, SIG, Type, Date, and Time fields.



Display Observations DOBS [Back to Menu](#)

Station ID:  or SIG:  Type:  Date:  Time:

In the query form you can enter some or all of the fields in the query block to specify the criteria that WIMS will use to retrieve records. WIMS will retrieve only those records that match all the specified criteria. To initiate the query, click find after entering the appropriate search criteria.

One of the most common searches is by date. A user can search by a specific date or a range of dates. The date must be entered into the Date field by DD-MM-YY (27-jun-02). For a range of dates enter the first date and space and enter the second date (01-jun-02 27-jun-02).



Display Observations DOBS [Back to Menu](#)

Station ID:  or SIG:  Type:  Date:  Time:



The greater than sign (>) and less than sign (<) may also be used. For example to search for all observations greater-than June 1<sup>st</sup> type >01-jun-02 in the date field.



Wildcards, symbols representing character strings, may be used in any query block. For example, using the FastPath LUSER, open the List User screen. In the search box enter “OP\$FS8%” click on the Display button. This will return all of the users with “OP\$FS8” as the start of the Logon ID. When entering the search criteria into the query box, do not include the quotation marks. See the WIMS User Guide for a list of Wildcards.



The results will be returned in the bottom window.

User ID	Name	Telephone	Fax
<a href="#">FS8124</a>	BETH JONES	501 278 2914	
<a href="#">FS8132</a>	JULYLY JUNGLEY	201 256 2900	
<a href="#">FS8146</a>	DOO DOTT I	501 456 4976	
<a href="#">FS8151</a>	DOO DOTT I	501 456 4976	
<a href="#">FS8156</a>	EDE FDET	501 456 4976	
<a href="#">FS8151</a>	L KID HUGILL	501 456 4976	
<a href="#">FS8155</a>	BRIJCE FLOYD	501 277 6651	
<a href="#">FS8147</a>	BRUCE FLOYD	501 277 6651	
<a href="#">FS8149</a>	BRIJCE FLOYD	501 277 6651	
<a href="#">FS8151</a>	DOO DOTT I	501 456 4976	
<a href="#">FS8148</a>	GAR GARROTTA	501 956 2946	
<a href="#">FS8148</a>	DOO DOTT I	501 456 4976	

Notice the scroll bar on the right hand side of the screen. If the query returns more rows than can be displayed on the screen, using the scroll bar will allow the user to view all of the rows.

For more in depth descriptions of the query blocks and query mode, see the WIMS User Guide Chapter 5.

#### **TASK 4**

Using the FastPath DOBS, use the query function with the date field for station 101708. Try using a range of dates, the greater than sign and the less than sign (If you leave the Type blank, you will get all data for the date range specified. This can be a significant amount of data if you are querying a RAWS station where there are 24 observations per day).

Using the LUSER FastPath, determine the name of the person for Logon ID FS8418.

Using the FastPath LSTA, determine if user FS8418 owns any stations.

How many stations in WIMS have the word “BEAR” in the name?

#### **DRAWS**

Many of the stations in WIMS are RAWS stations. That means that the observations are transmitted to WIMS via satellite. The raw (unedited) observations can be viewed using the Remote Automatic Weather Station Display DRAWS screen. The FastPath to view this screen is DRAWS. Remember that “D” in the FastPath name means display.

To use the DRAWS screen enter the Station ID or a SIG, a date or range of dates and click find.

## SIG

Often you want to display the same information or perform the same function on a number of stations at once. The Special Interest Group or SIG function of WIMS allows you to create a grouping of stations. Procedures to build Special Interest Groups are discussed later.

Station ID	Obs Date	Obs HH MM	O T	Dry Tmp	RH	Wind Dir Sp	Temp Max Min	RH% Max Min	RGauge	Hrly Prec	BVit	BPress	Fuel Temp
------------	----------	--------------	--------	------------	----	----------------	-----------------	----------------	--------	--------------	------	--------	--------------

The results will display in the bottom window.

### Column Definitions

**Station ID** – The unique six digit numeric identifier assigned to each station by the NWS.

**Obs Date** – the date of the observation

**Obs HH MM** – The time of the observation. In the RAWS screen the hour and minutes will be displayed. In the DOBS screen only the hour will be displayed.

#### **OT (Observation Types)**

WIMS recognizes four types of observations or outputs from which the user can choose. These are:

O - Observed weather data or calculated NFDRS indices.

R - Raw weather data from automated stations.

S - Special observations (observations or indices based on other than standard observations).

F - Forecasted indices generated from data forecasted by the NWS.

Types X and A are used by system administrators and are not available to regular users.

**Dry Tmp** – The dry bulb temperature at the time of the observation.

**RH** – Relative Humidity at the time of the observation.

**Wind Dir** – Wind direction at the time of the observation.

**Wind Sp** – Wind speed at the time of the observation.

**Temp Max** – The maximum temperature taken during the 24 hour period, for example 1300 on Tuesday to 1259 on Wednesday.

**Temp Min** – The minimum temperature taken during the 24 hour period.

**RGauge** – Displays the measured amount of rainfall. This is a cumulative total and reset when the tipping bucket on the station is reset.

**Hrly Prcp** – Hourly Precipitation displays the hourly amount of precipitation measured during the last 24 hours.

**BVlt** – Battery Voltage displays the voltage of the battery in the RAWS station.

**BPress** – Barometric pressure displays the barometric pressure measured in the last 24 hours.



WIMS - Microsoft Internet Explorer provided by USDA Forest Service

Address: http://faweb.nwgc.gov/wims/sp/default.htm

Weather Information Management System

Page: 1 2 Remote Automatic Weather Station Display DRAWS

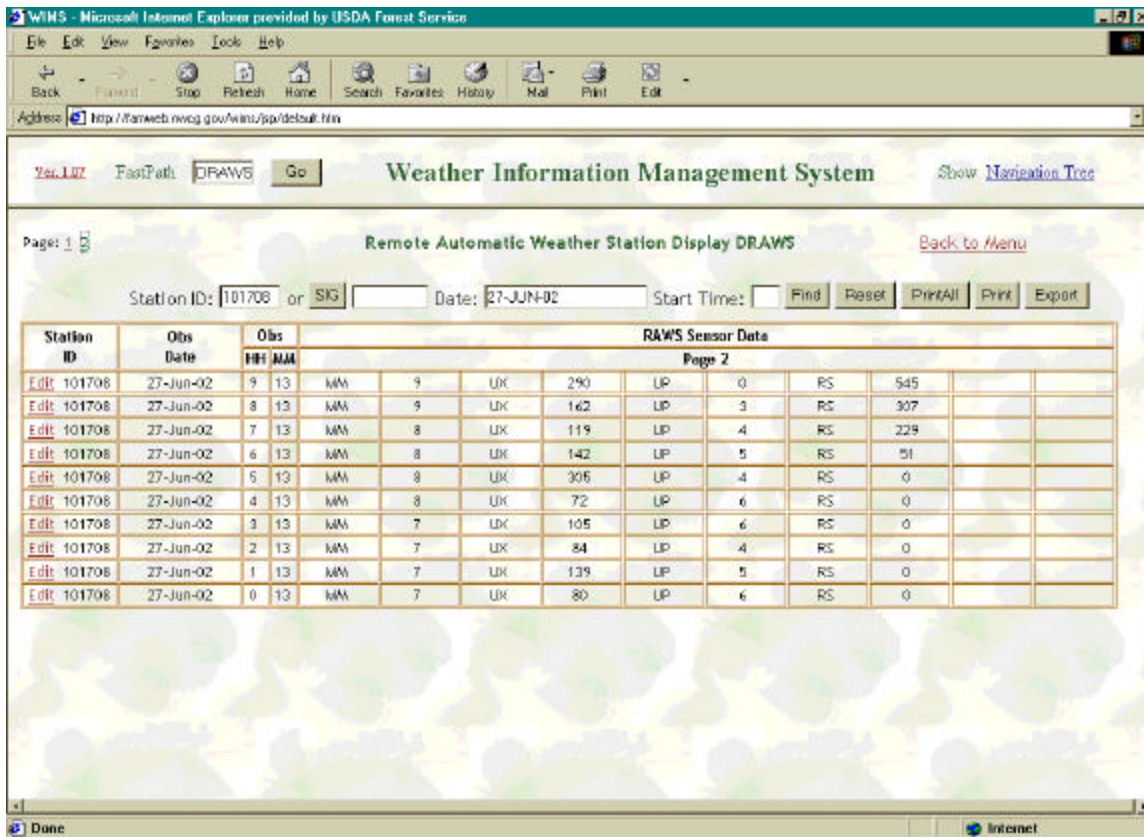
Station ID: 101708 or SIG Date: 27-JUN-02 Start Time: Find Reset PrintAll Print Export

Station ID	Obs Date	Obs		O T	Dry Temp	Wind			Temp		RH%		RGauge	Hly Prep	BVI	BPress	Fuel Temp
		HH	MM			RH	Dir	Sp	Max	Min	Max	Min					
Edit 101708	27-Jun-02	9	13	R	79	38	299	0	101	53	66	9	0.28	0.0	13.5		90
Edit 101708	27-Jun-02	8	13	R	71	48	186	0	101	53	66	9	0.28	0.0	13.6		73
Edit 101708	27-Jun-02	7	13	R	63	58	123	0	101	53	66	9	0.28	0.0	13.5		68
Edit 101708	27-Jun-02	6	13	R	53	66	317	0	101	53	66	9	0.28	0.0	13.1		53
Edit 101708	27-Jun-02	5	13	R	56	58	52	0	101	56	59	9	0.28	0.0	12.9		51
Edit 101708	27-Jun-02	4	13	R	57	52	47	1	101	56	59	9	0.28	0.0	13		55
Edit 101708	27-Jun-02	3	13	R	56	59	336	0	101	56	59	9	0.28	0.0	13		52
Edit 101708	27-Jun-02	2	13	R	62	42	63	0	101	60	57	9	0.28	0.0	13		59
Edit 101708	27-Jun-02	1	13	R	61	46	331	0	101	60	57	9	0.28	0.0	13		59
Edit 101708	27-Jun-02	0	13	R	65	39	233	0	101	60	57	9	0.28	0.0	13		62

Total number of rows retrieved: 10. ##### BLM Boise RAWs data is currently at 27-JUN-02 17:00:02 GMT #####

The DRAWS screen is a very valuable screen for trouble shooting station sensor problems. For example, look at the Wind Dir column. Are the values changing or showing the same direction for a number of hours? If the same value is showing for a number of hours or days, the Wind Dir sensor on the station is probably not functioning correctly. Using this screen is an easy way to monitor station performance.

Notice in the top left hand corner of the bottom window. Two pages are shown. The first page shows the eight standard sensors on a station. The second page will show additional sensors that have been added to a station. The labels, or codes, (such as MM) are provided by the station owner from the Extra Data Channels link on the ESTA screen.



Remember to refer to the WIMS User Guide for more information about the additional sensors.

## TASK 5

View the DRAWS screen for Station ID 101708 using the date 15-jun-02.

1. How many hours are present?
2. List the columns that are displayed in the first screen.
3. Move to the second page, how many additional sensors are on this station?
4. What are they? (Remember to look in the WIMS User Guide).
5. Using this station which observation should be used for editing the daily observation?

## Editing Daily Observations

Through out this tutorial you have learned how WIMS is structured, how to use FastPaths, query blocks, station catalogs and to view the Remote Automatic Weather Station Display (DRAWS) screen. Now let's talk about daily operations – editing the observations for automated stations and entering new observations for manual stations. Observations need to be entered or edited each day to produce the NFDRS indices and for the NWS to produce forecasts.

### Editing observations for a manual station.

To enter observations for a manual station, start with the FastPath NOBS.



The Create Observations NOBS screen will open and requires some basic information to get started.

X	Station ID	Ob Tm	O T	W	Dry Tmp	Hum Val	M L	HC Rsk	Wind		10 Hr	Temp		RH%	
									Dir	SP		Max	Min	Max	Min

Enter the Station ID and the date. Click the Setup button.

X	Station ID	Ob Tm	O T	W	Dry Tmp	Hum Val	M L	HC Rsk	Wind		10 Hr	Temp		RH%		Dur	Amt	Y L	FHC Rsk	W F
									Dir	SP		Max	Min	Max	Min					
	109699	13	0																	

The data entry portion of the window opens displaying the Station ID, the Observation Time, and the Observation Type. The user enters the rest of the data starting with State of Weather. Where does the information to enter into WIMS

come from? The manual stations require a person to physically visit the station daily and take the observation. If the opportunity presents itself, learn how to take the weather, or at least learn enough about the weather to ask questions. Required entries include the State of the Weather in the “W” column, Dry Tmp (Dry Bulb Temperature), Hum Val (Humidity Value), Wind Direction and speed, Duration (precipitation duration) and AMT (Precipitation Amount). In the ML (Morning Lightning) and YL (Yesterdays Lightning) columns no entry is required. In the columns HC RSK (Human Cause Risk) and FHC Risk (Forecasted Human Cause Risk) enter a zero. These columns are no longer being used in the calculations, but an entry is required to save the observation. Verify the WF (Wet Flag). If the State of the Weather is 0, 1, 2, 3 the WF should be N. If the State of the Weather is 5, 6, 7 the Wet Flag should be Y. Click Save to save the edits. For information regarding observations see the WIMS User Guide Chapter 7, and the Weather Observers Handbook.

Station ID	Ob Tin	O T	W	Dry Tmp	Hum Val	M L	HC Rsk	Wind Dir	SP	10 Hr	Temp Max	Min	RH% Max	Min	Dur	Amt	Y L	FHC Rsk	W F
109699	13	0	2	91	22	1	1	288	2		101	53	66	8	0	0		1	N

After the observation is entered click the Save button.

Info: Station Information successfully created. [109699/27-JUN-02/13/0]  
 Info: XCNFDR completed [109699/27-JUN-02/13/0]

Station ID	Ob Tin	O T	W	Dry Tmp	Hum Val	M L	HC Rsk	Wind Dir	SP	10 Hr	Temp Max	Min	RH% Max	Min	Dur	Amt	Y L	FHC Rsk	W F
109699	13	0	2	91	22	1	1	288	2		101	53	66	8	0	0		1	N

The user will receive a confirmation from WIMS that the observation was saved.

### Editing observations for an automated station

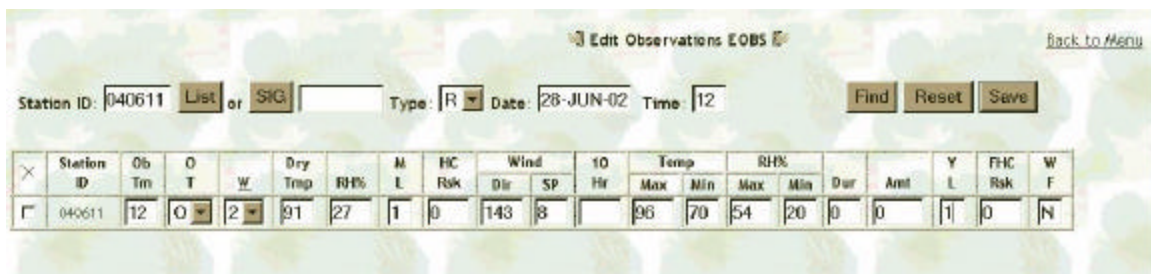
To edit observations for a RAWS (automated station) enter the FastPath EOBS. When the screen opens, enter the station ID, the OT (observation type) is “R”, enter the date and the desired time for editing the observation. In this case the Station ID is 040611, the date is 28-JUN-02, and the time 12. Click Find.



When selecting the RAWS observation to edit for NFDRS calculations, remember that WIMS truncates the minutes from the observation. A RAWS observation taken at 1259 is called a 1200 observation and one taken at 1301 is called a 1300 observation. You need to know when your station data is transmitted to correctly identify the observation to edit for NFDRS calculations.



The desired RAWS observation is displayed.



Now it is time to edit the observation. Change the OT from “R” to “O”, enter the State of the Weather in the “W” column. In the ML (Morning Lightning) and YL (Yesterdays Lightning) columns no entry is required. In the columns HC RSK (Human Cause Risk) and FHC Risk (Forecasted Human Cause Risk) enter a zero. These columns are no longer being used in the calculations, but an entry is required to save the observation. Verify the WF (Wet Flag). If the State of the Weather is 0, 1, 2, 3 the WF should be N. If the State of the Weather is 5, 6, 7 the Wet Flag should be Y. Click Save to save the edits. For information regarding observations see the WIMS User Guide Chapter 7.



The observation will be displayed with the edits and a message will be displayed stating the observation was successfully saved.

*Remember observations must be entered daily for NFDRS and NWS forecasts to be produced. Most observations must be edited no later than 3:00 PM local time to be used by the National Weather Service to produce their forecasts. It is also important to enter the observations every day. This will produce the most accurate NFDRS outputs.*

## Printing observations

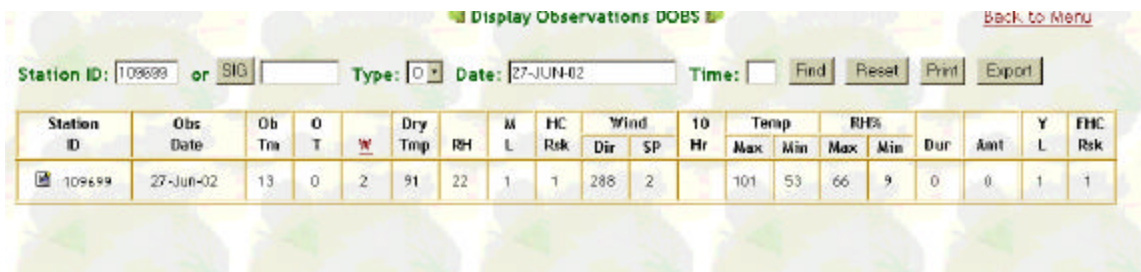
After the observations have been entered and edited many units like to keep a hard copy. To print the observations use the FastPath DOBS.



The Display Observation DOBS screen will open in the bottom window.



Enter the Station ID, the Obs Type (O, because we want to see the observed obs) and the date and click Find. If desired the Type could be changed to “F” for Forecasted, and the forecasted observation could be viewed.

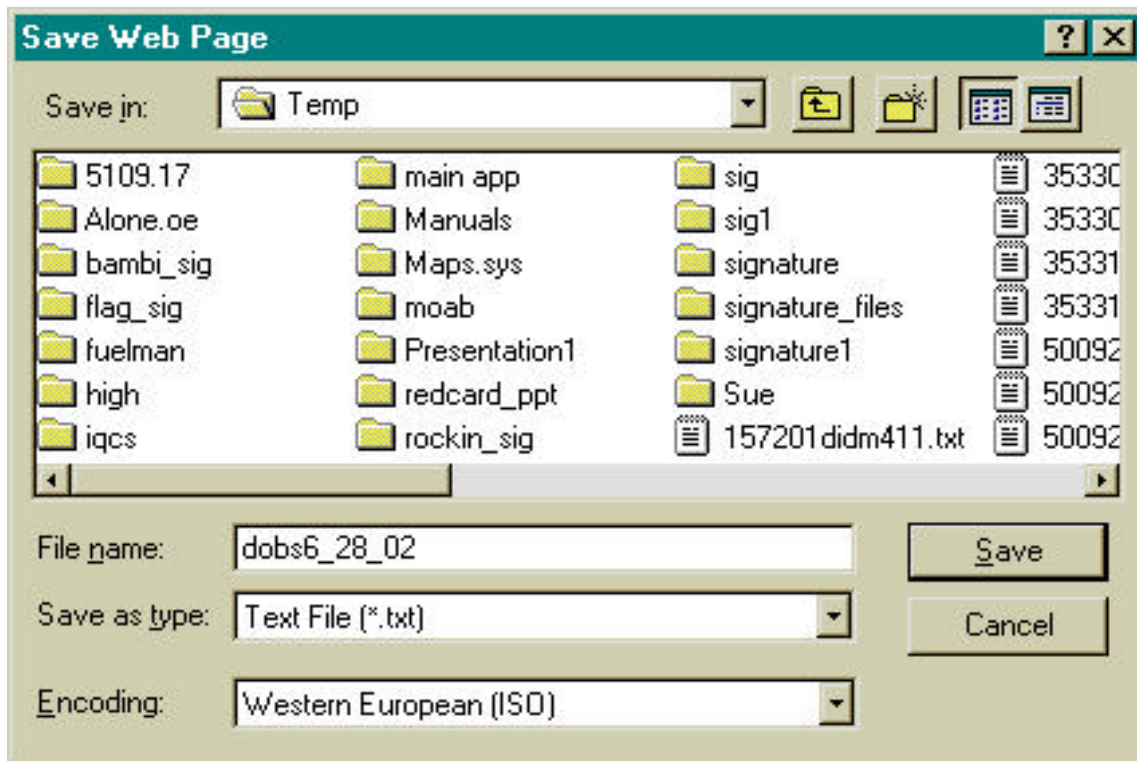


The desired observation will display. Click the Print button.

http://famweb.nwcg.gov/wims/jsp/ObsFndrForm.jsp?holdStationId=109699&holdSigName=&holdObsType= - M

Station	Obs	Obs	Obs	S	Dry	RH	M	HC	Wnd	Wnd	10	Tmp	Tmp	RH%	RH%	Dur	Amt	Y	FHC
ID	Name	Date	Tm	Typ	W	Tmp	L	Rsk	Dir	Sp	Hr	Max	Min	Max	Min			L	Rsk
109699	WOSYS	27-Jun-02	13	0	2	91	22	1	1288	2	101	53	66	9	0	0	1	1	

The data will be displayed on the screen. Click File and Print. To save to Microsoft Notepad, click File and Save As. The following window will open. Select the desired directory to save the observations to the hard drive. Make sure to change the file type to .txt.



## Special Interest Groups (SIGS)

Now that you have learned how to edit observations you must be thinking about editing observations for multiple stations and moving between all of the screens. Why not do the editing all at once? That can be easily done by creating a SIG. Use the FastPath NSIG, to access the Create a special Interest Group form.



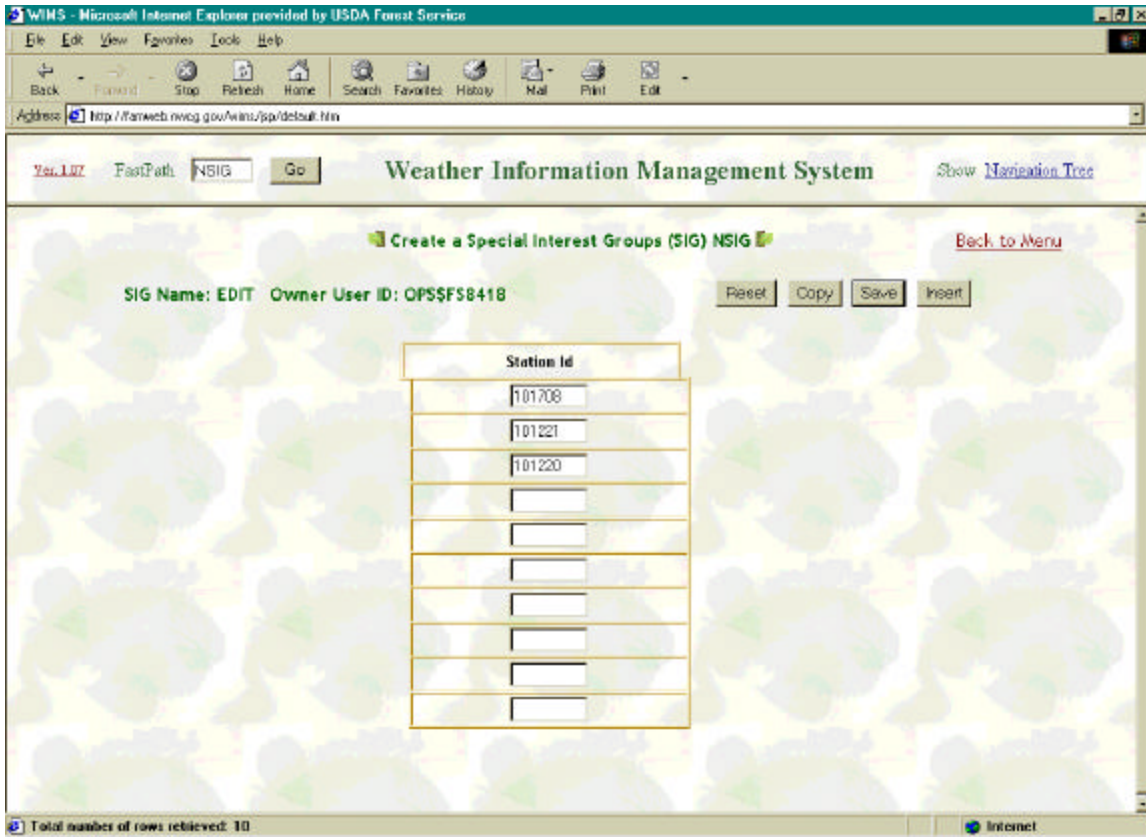
The screenshot shows the 'Create a Special Interest Groups (SIG) NSIG' form in the Weather Information Management System. At the top, there is a navigation bar with 'FastPath', 'NSIG', and 'Go' buttons, and a 'Show Navigation Tree' link. The main heading is 'Create a Special Interest Groups (SIG) NSIG'. Below this, there is a 'SIG Name' field containing 'edit' and an 'Owner User ID' field containing 'OPSSF58418'. To the right of these fields are 'Setup', 'Reset', and 'Copy' buttons. At the bottom, there is a 'Station Id' input field.

The Create a Special Interest Groups (SIG) NSIG will open. Enter the desired SIG name, (in this case the name EDIT is used) and click Setup.

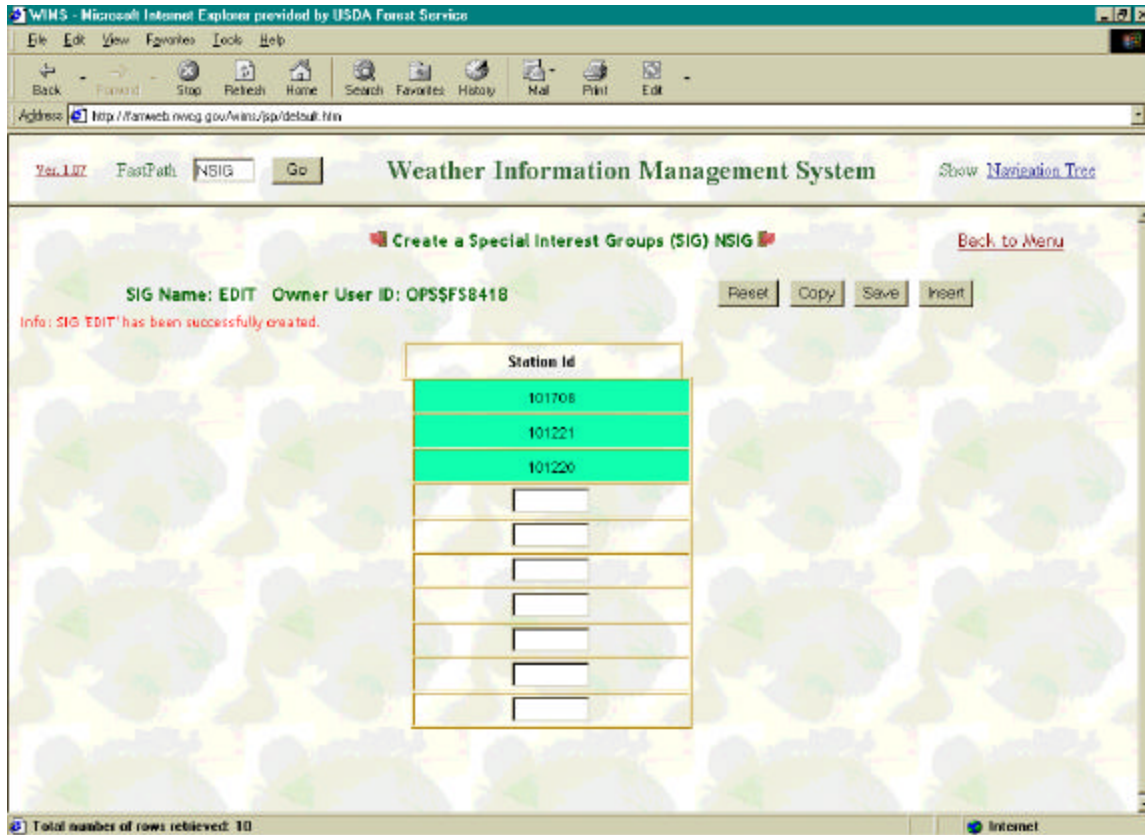
Enter the Station ID(s) to be included in the SIG.

Note: When creating a SIG to be used for editing stations it is suggested to use stations that all have the same observation time defined in the station catalog. For instance create a SIG for all stations with an observation time of 13.





Click Save to save the SIG.



A confirmation screen will display showing the SIG has been created.

To use the SIG to edit observations use the FastPath EOBS. The Edit Observations EOBS screen will open. Rather than a Station ID enter the SIG name (EDIT in this example), enter the Type “R” and enter the Date and Time and click Find.



The Edit Observations EOBS form will display an observation for each station in the SIG group. Edit the observations as defined above.

## TASK 6

Create a SIG (Special Interest Group) for editing the observations. Remember to keep the observation time in mind when creating the SIG. Where would you find out the observation time?

### Viewing NFDRS Indices

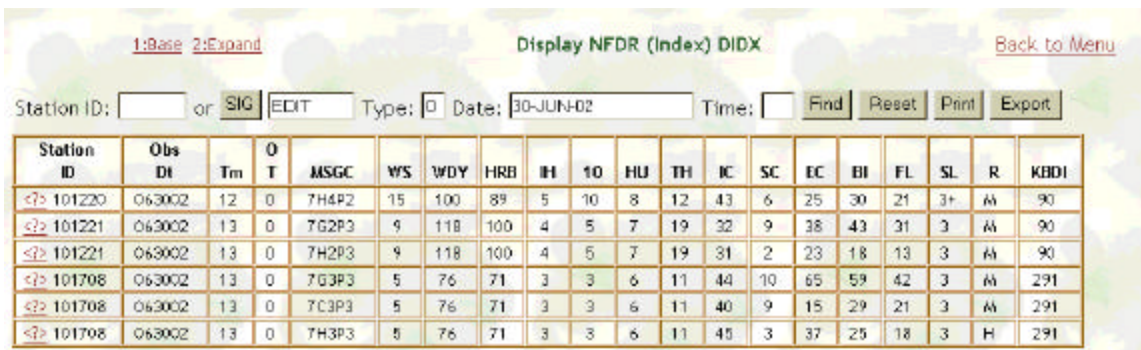
Now that observations have been entered the NFDRS Indices may be viewed. There are two FastPaths that are useful when viewing the NFDRS Indices. Let's start by using the FastPath DIDX.



The Display NFDR (Index) DIDX screen will open. This screen can be used with either a Station ID or a SIG. Enter the Type, in this case “O” (for observed indices) and the desired date. Since we are looking for the Type “O” a time is not required. Click Find. If the desired Type is Forecasted enter an “F” into the Type field. The forecasted indices will be displayed.



The Display NFDR (Index) DIDX screen will display.



Notice that for two of the stations more than one line displays. That means that more than one fuel model is in the Station Catalog NFDRS Parameters screen.

More information about the indices can be found in Gaining an Understanding of the National Fire Danger Rating System.

The Display NFDR (Index) DIDX screen may also be used with a range of dates.

Station ID	Obs Dt	Tm	O T	MSGC	WS	WDY	HRB	IH	10	HU	TH	IC	SC	EC	BI	FL	SL	R	KBDI
<> 101220	063002	12	O	7H4P2	15	100	89	5	10	8	12	43	6	25	30	21	3+	M	90
<> 101221	063002	13	O	7G2P3	9	118	100	4	5	7	19	32	9	38	43	31	3	M	90
<> 101221	063002	13	O	7H2P3	9	118	100	4	5	7	19	31	2	23	18	13	3	M	90
<> 101708	063002	13	O	7G3P3	5	76	71	3	3	6	11	44	10	65	59	42	3	M	291
<> 101708	063002	13	O	7C3P3	5	76	71	3	3	6	11	40	9	15	29	21	3	M	291
<> 101708	063002	13	O	7H3P3	5	76	71	3	3	6	11	45	3	37	25	18	3	H	291
<> 101220	062902	12	O	7H4P2	1	102	90	10	17	8	13	10	2	18	16	11	2	L	86
<> 101221	062902	13	O	7G2P3	8	117	98	9	8	7	19	11	7	33	35	25	3	M	87
<> 101221	062902	13	O	7H2P3	8	117	98	9	8	7	19	11	2	18	14	10	3	M	87
<> 101708	062902	13	O	7G3P3	5	77	73	5	5	6	11	25	8	61	53	38	3	M	286
<> 101708	062902	13	O	7C3P3	5	77	73	5	5	6	11	23	8	12	24	17	3	M	286
<> 101708	062902	13	O	7H3P3	5	77	73	5	5	6	11	26	2	32	22	16	3	M	286
<> 101220	062802	12	O	7H4P2	1	100	89	5	8	6	12	27	2	28	20	14	3-	M	79
<> 101221	062802	13	O	7G2P3	6	115	94	7	7	7	20	14	5	33	33	24	3	M	82
<> 101221	062802	13	O	7H2P3	6	115	94	7	7	7	20	14	2	20	14	10	3	M	82
<> 101708	062802	13	O	7G3P3	4	79	74	6	6	6	11	20	7	59	48	34	3	M	280
<> 101708	062802	13	O	7C3P3	4	79	74	6	6	6	11	19	7	11	22	16	3	M	280
<> 101708	062802	13	O	7H3P3	4	79	74	6	6	6	11	21	2	30	20	14	2	M	280

Notice the scroll bar on the right side of the screen. Moving the scroll bar up and down the user can view all of the dates.

**Column Definitions** (See WIMS User Guide Appendix F for detailed explanations):

**Station ID** – The Station ID assigned by the NWS.

**Obs DT** – The date of the observation.

**TM** – Time of the observation.

**OT** – Observation Type

**MSGC** – **M** -Fuel Model (See Gaining an Understanding of the National Fire Danger Rating System.). **S** – Slope Class, **G** – Grass Type (Perennial or Annual), **C** – Climate Class.

**WS** – Wind Speed

**WDY** – Live Woody Fuel Moisture

**HRB** – Live Herbaceous Fuel Moisture

**IH** – 1 hour fuel moisture



- 10** – 10 hour fuel moisture
- HU** – Hundred hour fuel moisture
- TH** – Thousand hour fuel moisture
- IC** – Ignition component
- SC** – Spread Component
- EC** – Energy Release component
- BI** – Burning Index
- FL** – Fire Load Index
- SL** – Staffing Level
- R** – Adjective fire danger rating
- KBDI** – Keetch-Byram Drought Index.



Using the FastPath DIDM the user can open the Display NFDR Moisture (Index) DIDM form.

The screenshot shows the 'Display NFDR Moisture (Index) DIDM' form. At the top, there are links for '1:Base' and '2:Expand', and a 'Back to Menu' link on the right. Below the title is a search area with 'Station ID:' followed by an input field, 'or SIG' followed by an input field, 'EDIT' in a box, 'Type:' followed by a dropdown menu set to 'O', and 'Date:' followed by an input field containing '30-JUN-02'. There are buttons for 'Find', 'Reset', 'PrintBase', 'PrintAll', and 'Export'. Below the search area is a table with 17 columns: 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, Grn GR, Grn SH, KBDI, and W F. The table contains three rows of data.

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	Grn GR	Grn SH	KBDI	W F
<?> 101220	063002	O	7H4P2	100		89	5	10	8	13	12		0	0	90	N
<?> 101221	063002	O	7G2P3	118		100	4	5	7	19	19		0	0	90	N
<?> 101708	063002	O	7G3P3	76		71	3	3	6	11	12		0	0	291	N

The Display NFDR Moisture (Index) DIDM form works the same as most other forms. The user can select a specific Station ID or SIG group. The Type O for observed is most common. A specific date or a range of dates can also be displayed.

This screen allows the users to view the Fuel Moistures. For more information on Fuel Moistures and NFDRS Outputs refer to the publication Gaining an Understanding of the National Fire Danger Rating System.

## **TASK 7**

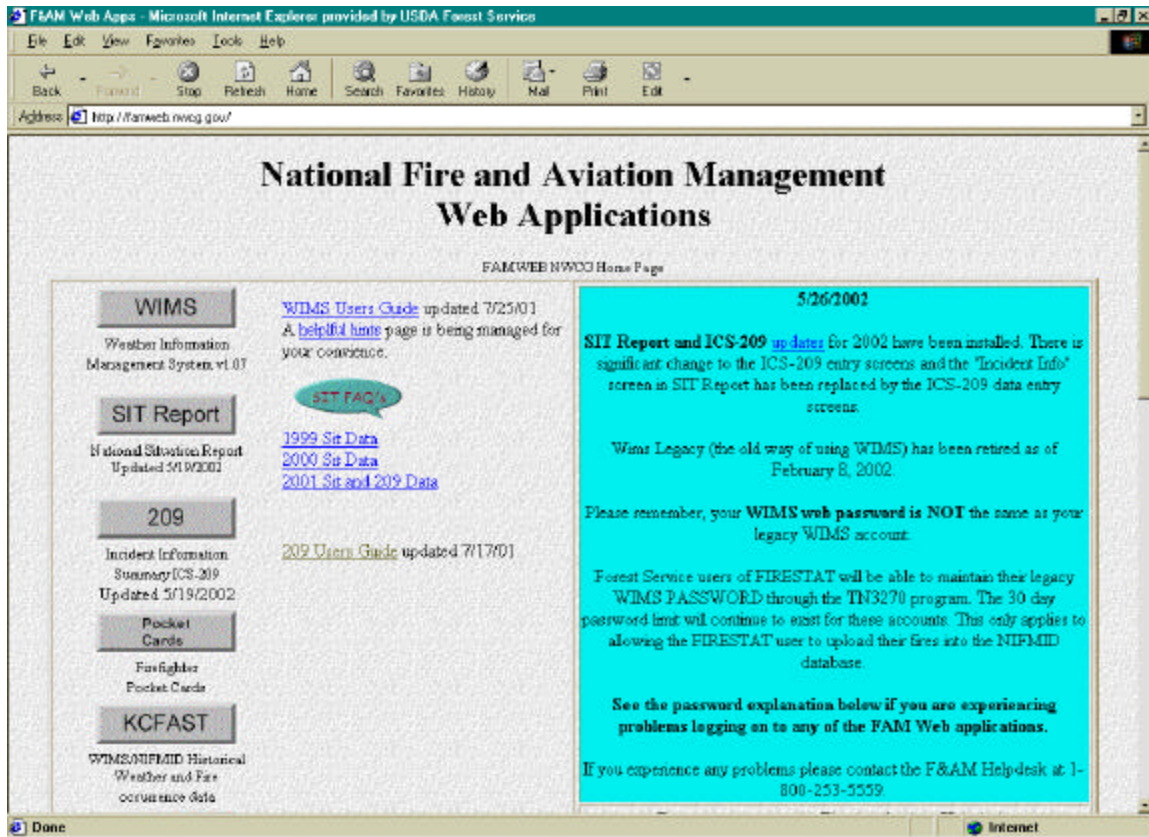
Using the FastPath DIDX and DIDM take a look at different station outputs. Using the Gaining an Understanding of the National Fire Danger Rating System as a guide, look at the outputs.

1. List the fuel models for each station you view.
2. Does a station have more than one line in DIDX? Why?
3. Look at the DIDM. What is the difference between the DIDX and the DIDM?
4. In the DIDM what does it mean if the Wet Flag is set to “Y”?
5. When editing observations what field controls the Wet Flag?

### **Password Management**

Now that you have logged on to WIMS and you know your way around, there is one last thing to be done. Change your password. Logon ID's and passwords are issued for security. In order to be secure passwords need to be managed. It is recommended that users change passwords every 30 days.

To change the WIMS password go to the FAMWEB.NWCG.GOV homepage.



Using the scroll bar on the right hand side, scroll down to FAMWEB [password](#) management.

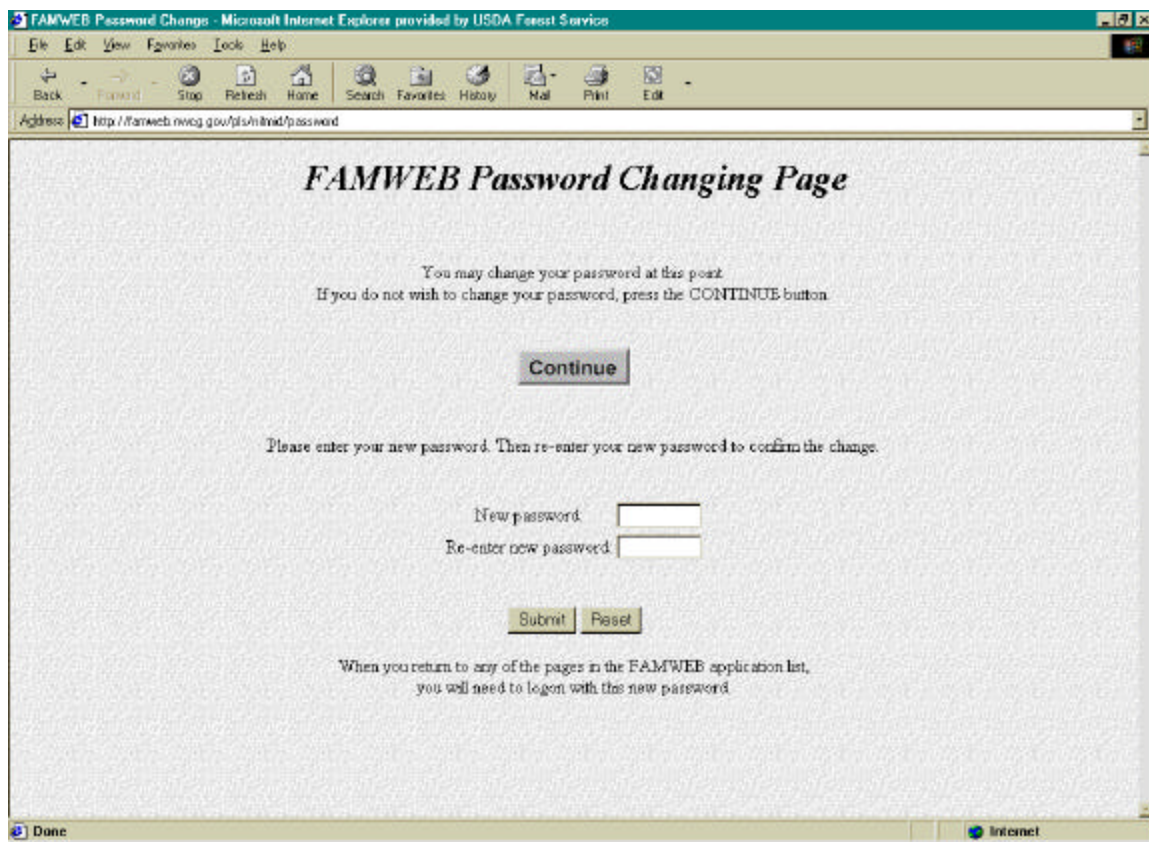


Click on the word password in FAMWEB password management and enter your username and password. Click on OK.





The FAMWEB Changing Passwords screen will display.



Note: By clicking on Continue you will be exited from the FAMWEB Password change routine.

To change passwords enter a new password, then reenter the new password for verification and click Submit.

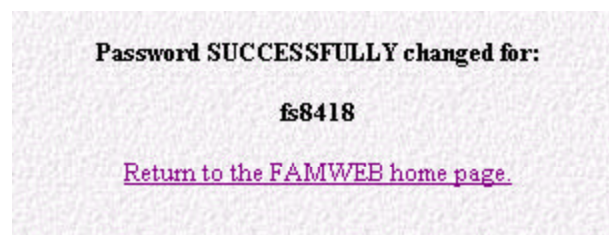


Please enter your new password. Then re-enter your new password to confirm the change.

New password:

Re-enter new password:

When your password has been successfully changed the following screen will display.



## Task

Change your password.

## Summary

This tutorial, when used in conjunction with the WIMS User Guide and Gaining an Understanding of the National Fire Danger Rating System, provides the user basic WIMS skills. It is suggested that a WIMS User training session be attended for more in depth WIMS techniques.

Please direct any comments or questions to Sue Petersen (spetersen@fs.fed.us).



NAME: \_\_\_\_\_

**WIMS for Beginners**  
**S-491 Prequalifying Work Quiz**

1. What is your Logon ID?
  
2. Which FastPath would you use to update your profile?
  
3. Who is user FS8374?  
How many stations does this user own?
  
4. What additional sensors are listed for station 045604?  
(List two digit code and sensor function.)
  
  
  
  
  
  
  
  
  
  
5. What is the Green-up Date for station 045421?
  
  
  
  
  
  
  
  
  
  
6. Hell Hole weather station is on what Unit?
  
  
  
  
  
  
  
  
  
  
7. What is the climate class for station 44804?
  
  
  
  
  
  
  
  
  
  
8. List the primary (or priority) fuel model for station 045101.
  
  
  
  
  
  
  
  
  
  
9. What is the Regular Scheduled Observation Time for station 045005?

10. What is the NESDIS number for station 040218?
  
11. Which agency is the observing agency for the Briones weather station?  
  
The Briones weather station is in which Forecast Zone?
  
12. Create a SIG with the following stations 43605, 43709, 44301, 44510, and 44712.  
  
Using the SIG you just created, go to DOBS, print a listing of the Type O observations for July 1 for the previous calendar year. Print the DIDX for the same SIG, same Type and same Date. **Put your name on the both pages and return with your prequalifying work.**
  
13. Using the Edit Station FastPath, select any station from your unit. **Print the station catalog, put your name on it and return it with your prequalifying work.**
  
14. What was the staffing level and adjective fire danger rating for the primary (or priority #1) fuel model for station 101708 for June 30 for the previous calendar year?
  
15. What was the woody fuel moisture for station 101708 for May 28 for the previous calendar year?

NAME \_\_\_\_\_

**Gaining an Understanding of NFDRS  
S-491 Prequalifying Work Quiz**

1. Fire Danger predictions are site specific, while fire behavior predictions are broad scale.

True

False

2. Fire Danger Ratings provide an estimate of what to expect on an:

- a. Initiating Fire
- b. Existing Fire

3. If the Spread Component doubles, the projected workload measured by that component doubles.

True

False

4. The NFDRS tracks the effects of previous weather events on:

- a. Live Fuels Only
- b. Dead Fuels Only
- c. Both Live and Dead Fuels

5. The NFDRS uses \_\_\_\_\_ fuel models to describe the various fuel bed conditions found across the country.

- a. 13
- b. 4
- c. 20
- d. 6

6. Moisture of extinction is defined as:
- The theoretical moisture content of dead fuels above which a fire will self extinguish.
  - The theoretical moisture content of dead fuels above which a fire will not spread across the fuel bed.
  - The theoretical moisture content of dead fuels below which a fire will not spread across the fuel bed.
7. Which State of Weather values automatically set calculated NFDRS indices to zero.
- 5, 6 and 7
  - 0, 1, 2, 3 and 4
  - 8 and 9
8. The Season and Greenness Factors concept apply equally to the 1978 and 1988 versions of the National Fire Danger Rating System.

True

False

9. 1000 Hr modeled fuel moisture content is represented by:
- Dead fuels between 3” and 8” diameter in the fuel bed.
  - Live and dead fuels between 3” and 8” diameter in the fuel bed.
  - Dead fuels between 3” and 8” diameter and/or any duff material about 4” below the surface of the forest floor.
  - Duff material more than 4” below the surface of the forest floor.
10. KBDI is a required input for calculating NFDRS indices using the 1978 fuel models.

True

False



11. NFDRS calculations are normally done on weather observations taken at:
- 1300 hours LST.
  - 1400 hours LST.
  - 1500 hours LST.
  - 1600 hours LST.
12. The research charter that guided the development of the 1978 NFDRS included four basic elements that the system must meet. What are they?
- Scientifically based.
  - Applicable only to forested areas of the country.
  - Costs of implementation should not be a major concern.
  - Adaptable to the needs of the local managers.
  - Applicable anywhere in the country.
  - Based on the best Fire Danger Rating System in use at the time.
  - Relatively easy and inexpensive to implement and operate.
  - Satisfies the needs of National and State Level program managers only.
13. Which of the following statements are true relative to the fundamental assumptions made within the National Fire Danger Rating System Model?  
The NFDRS \_\_\_\_\_
- rates the potential of initiating fires only.
  - indices represent the average conditions over a rating area.
  - takes into consideration crowning and spotting potential in calculations.
  - assumes fuel beds are continuous and uniform across the landscape.
  - ratings are relative, not absolute.

14. When using the 1978 NFDRS, Climate Class controls what two basic functions?
- Determines the length of time between the start of green-up and full green-up.
  - Sets the fuel model you should use for NFDRS calculations.
  - Sets the default or seasonal start up values for herbaceous and woody Fuel Moistures.
  - Determines which indices or component you will use for staffing.
15. What four variables go into the calculation of the 1000 HR Fuel Moisture?
- Carry over 1000 hour FM value from the previous day.
  - Current 1300 LST temperature and relative humidity.
  - Precipitation amount during the previous 24 hour period.
  - Duration of precipitation in the previous 24 hour period.
  - Maximum and minimum temperature and relative humidity for the day.
  - Length of day as determined by calendar date and latitude.
16. The X-1000 hour Fuel Moisture is:
- a measure of dead fuel moisture content of large fuels.
  - is an independent variable derived from the 1000 hr FM used to calculate herbaceous fuel moisture values.
  - responds similarly to precipitation as does the 1000 hr FM.
17. The Keetch-Byram Drought Index (KBDI) measures the amount of moisture needed to bring the soil profile back to saturation.

True

False

18. Match the NFDRS indices or component with the definition provided.
- |    |                      |    |   |
|----|----------------------|----|---|
| a. | Ignition Component   | 1. | A rating of the potential forward rate of spread of a fire.                               |
| b. | Spread Component     | 2. | A number related to the potential available energy per unit area at the head of a fire.   |
| c. | Burning Index        | 3. | The probability that a firebrand will cause a fire requiring suppression action.          |
| d. | Energy Release Comp. | 4. | A number related to the contribution of fire behavior to the effort of containing a fire. |
19. Which NFDRS index or component can be loosely coordinated to flame length by dividing the value by 10.
- a. Energy Release Component
  - b. Spread Component
  - c. Burning Index
  - d. Ignition Component
20. What two NDRS outputs go into the determination of the daily Adjective Rating of Fire Danger?
- a. Staffing Level and Spread Component
  - b. 1000 Hr FM and Ignition Component
  - c. Staffing Level and Ignition Component
  - d. Staffing Level and Burning Index



NAME \_\_\_\_\_

**Fuels and Fuel Moisture Review**  
**S-491 Prequalifying Work Quiz**

*(See S-290 Units 7 and 8 and Gaining an Understanding of the NFDRS)*

Use this set of questions as an “open book” test of your knowledge of fuels and fuel moisture. Look up the answers where necessary. Submit the completed answer sheet with your prequalifying work.

1. Fuel is: (choose one)
  - a. any organic material that is living or dead, that can ignite and burn.
  - b. only dead organic material that can dry out and burn.
  - c. any organic material that is on the surface of the ground, but not elevated material like tree crowns.

2. Match fuel type to its description:

- |                    |   |
|--------------------|---|
| _____Aerial fuels  | 1. All combustible materials lying beneath the surface.                     |
| _____Ground fuels  | 2. All green and dead organic materials located in the upper forest canopy. |
| _____Surface fuels | 3. All organic materials lying on or immediately above the ground.          |

3. Match fuel characteristic to its definition:

- |                             |   |
|-----------------------------|---|
| _____ Loading               | 1. Relates to the surface area-to-volume ratio.                           |
| _____ Size and Shape        | 2. The amount of water in fuel expressed as a percent of oven-dry weight. |
| _____ Compactness           | 3. The vertical or horizontal arrangement of fuel particles.              |
| _____ Horizontal Continuity | 4. The degree of patchiness in fuel distribution in an area.              |
| _____ Fuel Bed Orientation  | 5. The oven-dry weight of fuels within a specific area (usually tons/ac). |
| _____ Chemical Content      | 6. Spacing between fuel particles.  |
| _____ Moisture Content      | 7. The amount of volatile substances and minerals in fuels.               |

4. Dead fuels are broken down into (how many) \_\_\_\_\_ size classes according to their (what dimension) \_\_\_\_\_.

5. Which one of the following fuel characteristics affects all six fire behavior elements (ignition, spread, intensity, torching, spotting, crowning).

- fuel loading
- chemical content
- moisture content
- orientation



6. Fill in the blanks with (H) high or (L) low.
- Large diameter fuels have a \_\_\_\_\_ surface area-to-volume ratio.
  - Of the dead fuel size classes, the least heat is required to drive water out of \_\_\_\_\_ surface area-volume ratio fuels.
  - Live shrub leaves have a \_\_\_\_\_ surface area-to-volume ratio.
  - \_\_\_\_\_ surface area-to-volume ratio fuels gain moisture most rapidly on cool moist days.
7. Compaction is a fuel bed property. Consider fuel beds that are tightly compacted and those that are loosely compacted.
- Fuels ignite most easily if they are \_\_\_\_\_ compacted.
  - Fire spreads most rapidly in \_\_\_\_\_ compacted fuels.
  - \_\_\_\_\_ compacted fuels generate the greatest amount of heat within a specified area.
8. Fuel bed depth is determined by the \_\_\_\_\_ depth of the fuels that become involved in the flaming front of a fire.
- average
  - maximum
9. Select the best answer regarding horizontal continuity in fuels:
- Horizontal continuity affects where and how fast a fire will spread.
  - Horizontal continuity is affected by chemical properties of the fuels.
  - Horizontal continuity affects fire behavior only in the surface fuels.
  - Horizontal continuity affects fire behavior most in low surface area-to-volume fuels.

10. Select the best answer about fuel moisture in dead fuels. Fuel moisture is:
- a. is the amount of water in fuel expressed as a percent of the fresh field weight.
  - b. is the amount of water in fuel expressed as a percent of the oven dry weight.
  - c. changes most rapidly in fuels with low surface area-to-volume ratios.
  - d. is affected by rain, dew, ground moisture, and relative humidity but not evaporation.
11. Choose the correct answer to complete the statement. The primary carrier of a surface fire is:
- a. fuels with a large surface area-to-volume ratio.
  - b. fuels with a high mineral content.
  - c. fuels that are horizontally oriented.
  - d. fuels with a low live to dead ratio.
12. Select the factor(s) that DO NOT affect fine dead fuel moisture content:
- a. presence or absence of wind
  - b. size of fuels
  - c. mineral content of fuels
  - d. compactness of fuels
13. Timelag is:
- a. a characteristic of live fuels.
  - b. shorter in 1/2 inch twigs than in beech leaves.
  - c. a measure of the rate of fuel moisture exchange with the atmosphere.
  - d. a measure of the length of time needed to preheat fuels to the point of ignition.

14. Fill in the size class to the timelag period.
- 1 to 3 inches
  - 0 to 1/4 inch
  - 3 to 8 inches
  - 1/4 to 1 inch
15. Rank the following fuels for potential availability to burn on a hot, dry day, with 1 being the most available. (Hint: use surface area to volume ratio as the deciding factor.)
- \_\_\_\_\_ a. Live branchwood < 1/4 inch in diameter
  - \_\_\_\_\_ b. Live conifer needles
  - \_\_\_\_\_ c. Live tree trunk
  - \_\_\_\_\_ d. Fallen dead leaves
  - \_\_\_\_\_ e. Down, dead tree trunk
16. Choose the most correct statement describing consumption in fuels. Consumption is:
- Something our pioneer forefathers and foremothers died from.
  - Least complete in high surface area to volume fuels.
  - Generally more complete in a rapidly spreading fire front than in slowly moving backing fire.
  - Generally more complete in vertical fine fuels beds than in horizontal fuel complexes containing fine and coarse fuels given similar dry fuel moisture contents.

17. Fire behavior prediction and fire danger rating have four fuel model types in common. They are:
- a. Herbs, grass, timber litter, slash
  - b. Grass, forbs, conifers, slash
  - c. Perennials, brush, timber litter, slash
  - d. Grass, brush, timber litter, slash
18. List the 4 fuel groups and specify whether they are vertically or horizontally oriented.
- a. \_\_\_\_\_ , \_\_\_\_\_
  - b. \_\_\_\_\_ , \_\_\_\_\_
  - c. \_\_\_\_\_ , \_\_\_\_\_
  - d. \_\_\_\_\_ , \_\_\_\_\_
19. A fuel model is defined as:
- a. A detailed description of plant species and their ability to retain moisture over time.
  - b. A description of the fuels which will ignite and support combustion under specific topographic and weather conditions.
  - c. A set of numbers that define fuel input for use in the surface fire spread model.
  - d. A mathematical description of plants.
20. Available fuels are:
- a. Only the dead fuels that will ignite and support combustion.
  - b. Only the smaller fuels because they usually carry the fire front.
  - c. All dead and live fuels that will ignite and burn in the fire front, but not those that burn after the front passes.
  - d. All dead and live fuels that will ignite and continue to burn.

21. Match the fuel moisture estimate to the live plant condition described below:

- a. Maturing foliage, still developing with full turgor.
- b. Completely cured vegetation.
- c. Entering dormancy, coloration starting, some leaves may have dropped from the stem.
- d. Fresh foliage, annuals developing early in growth cycle.
- e. Mature foliage, new growth complete and comparable to older perennial foliage.

- 1. 300 percent \_\_\_\_\_
- 2. 200 percent \_\_\_\_\_
- 3. 100 percent \_\_\_\_\_
- 4. 50 percent \_\_\_\_\_
- 5. Equal to 1-hour fuel \_\_\_\_\_

22. Three terms are used to describe the stages of plant development described above. These stages are used in calculating fuel moisture content in the National Fire Danger Rating System, with different equations being used at each stage. Identify the moisture content range that corresponds to each stage:

	FBPS	NFDRS
_____ a. Green	1: 100-300+%	120 - 250%
_____ b. Transition	2: 0-60%	0 - 75%
_____ c. Cured	3: 0-30%	same in NFDRS
	4: 60-100%	75 - 120%
	5: 30-100	30-120%

23. Match the following terms to the correct statements:

- |          |                    |    |   |
|----------|--------------------|----|---|
| _____ a. | Live fuel moisture | 1. | Determined by external environmental factors. |
| _____ b. | Dead fuel moisture | 2. | Determined by phenological process.           |
| _____ c. | Live woody fuels   | 3. | Are not used in NFDRS calculations.           |

24. Match the following terms to the correct definitions:

- |       |                     |    |  |
|-------|---------------------|----|--|
| _____ | Live woody fuels    | 1. | Plants that reproduce from seeds each year.  |
| _____ | Evergreen           | 2. | With leaves that remain on the plant for one or more years.  |
| _____ | Deciduous           | 3. | Plants that reproduce from a protected plant part like a root or bud and live more than one year   |
| _____ | Herbaceous material | 4. | Those portions of shrubs small enough to burn in the passing flame front. Includes leaves and fine twigs less than 1/4 inch in diameter. |
| _____ | Perennial           | 5. | Plants that loose their leaves each year.  |
| _____ | Annual              | 6. | Live portions of grasses and forbs.  |

25. The fuel moisture at which fire will not spread is the?

- a. Moisture of extinction
- b. Moisture of depression
- c. Moisture of correction
- d. Moisture content at which live and dead fuels are equal



26. The fuel moisture at which fire will not spread is?
- a. Highest in cured grass.
  - b. Differs for each mathematical model depending on time of year.
  - c. Highest in fuel models with compacted dead fuels or southern live fuels.
  - d. Calculated at the time of day the weather is taken.

27. Name the fuel model group that best matches the following characteristics.  
\_\_\_\_\_

Vertical orientation.  
Rapid burnout with low intensity.  
Moisture content changes rapidly with changes in relative humidity.

28. Name the fuel model group that best matches the following characteristics.  
\_\_\_\_\_

Horizontal orientation.  
Fuel bed depth from 0.2 to 1 foot.  
Generally low to moderate spread rate and intensity unless large fuel or ladder fuel is present to move fire beyond the surface.

29. Name the fuel model group that best matches the following characteristics.  
\_\_\_\_\_

Vertical orientation.  
Deepest and most loosely compacted of the fuel beds.  
From very low to extreme spread rates and intensity.

30. Name the fuel model group that best matches the following characteristics.

\_\_\_\_\_

All size classes may be represented.

Generally horizontally oriented, dead.

Spread and intensity dependent on fuel load and arrangement which may vary more in this group than in others.

31. Identify whether the following environmental factors will raise (R) or lower (L) fine dead fuel moisture content.

\_\_\_\_\_ a. Increase in elevation

\_\_\_\_\_ b. Sunshine

\_\_\_\_\_ c. Change from north to south aspect

\_\_\_\_\_ d. Increased temperature with no change in solar radiation

\_\_\_\_\_ e. Night time temperatures reaching the dew point

\_\_\_\_\_ g. Change in the time of year from summer to autumn

32. Identify whether the following fuel bed and fuel particle characteristics will increase (I) or decrease (D) the rate at which fuel will change in moisture content.

\_\_\_\_\_ a. Increase compaction in the fuel bed

\_\_\_\_\_ b. Increase fuel particle size

\_\_\_\_\_ c. Increase the degree of decay in slash fuel particles

\_\_\_\_\_ d. Aging of conifer needles

\_\_\_\_\_ e. Increase in the volatile waxy coating on leaves or needles

## **FireFamily Plus S-491 Prequalifying Work**

FireFamily Plus is a powerful tool that allows you to summarize and analyze various aspects of climatology and fire business and to analyze the relationships between the two. This comprehensive software works with an integrated database containing both fire weather and fire occurrence. In S-491 you will be using this program to troubleshoot NFDRS outputs as well as to analyze relationships between various NFDRS outputs and fire occurrence to determine which of the outputs will be the best indicator of your fire problems.

The purpose of this unit of prequalifying work is to ensure basic familiarity with the screen layout and general functionality of FireFamily Plus. Walk through the various steps outlined below. You can find a copy of the FireFamily Plus users guide on the Internet at <http://www.fs.fed.us/fire/planning/nist>. Examples in the user's guide can be very helpful in becoming familiar with the program.

You will be asked to perform certain FireFamily Plus routines and return the output products with your completed prework package.

**I. FIRST CHECK YOUR FIREFAMILY PLUS VERSION IF CURRENTLY INSTALLED, UPDATE IF NECESSARY, OR INSTALL FIREFAMILY PLUS IF IT IS NOT ON YOUR COMPUTER.**

- A. Do you have FireFamily Plus on your computer? If so, continue reading below to check for version number. If you do not have FireFamily Plus on your computer, go to C.

If you already have FireFamily Plus loaded on your computer, check the version number to assure you have the most recent version. If not, go to C.

Start FireFamily Plus by double clicking on the FireFamily Plus icon.



Click on the task bar item **Help** and then click on **about FireFamily Plus** from the drop down menu. The text should read FireFamily Plus, version 3.0. If it does, go to D below.

- B. If you have a previous version FireFamily Plus, you can download the upgrade from the Internet site <http://www.fs.fed.us/fire/planning/nist>
1. Click on “FireFamily PlusV3.0 Upgrade Only” file to begin the upgrade download.
  2. Choose “save file” and then browse to the computers c: drive. This will download the Executable, Read, and Install files. The final directory structure will be FSAPPS/FSPROD/FAM/FireFamily Plus. Depending on your agency, you may need assistance from your IRM staff to install the software.
  3. Save the old file FFPLUS.mdb under a different name to ensure data that has been entered into that database is not overwritten during installation.
  4. Install the update by double clicking on the file `ffp_30_upgrade.exe` in your Windows Explorer.
  5. Click the “Next>” button each time it appears, then click the “Finish” button to complete installation.
  6. Go to D.
- C. If you don't have the program, you can download it from the Internet site <http://www.fs.fed.us/fire/planning/nist>
1. Click on “FireFamily Plus V3.0 Full Install file”.
  2. Choose “save file” and then browse to the location on your c: drive on which you would like to place the program file.
  3. Installing FireFamily Plus is very easy. Simply double click on the file `ffp_30_setup.exe` from your Windows Explorer.

4. Click the “Next>” button each time it appears, then click the “Finish” button to complete installation.
5. Go to D.

D. Proceed with the prequalifying work lesson.

## II. FIREFAMILY PLUS PREQUALIFYING WORK LESSON.

A. Start FireFamily Plus by double clicking on the FireFamily Plus icon.



The following is the FireFamily Plus task bar. It contains words linked to dropdown menus and buttons that are shortcuts to specific actions.



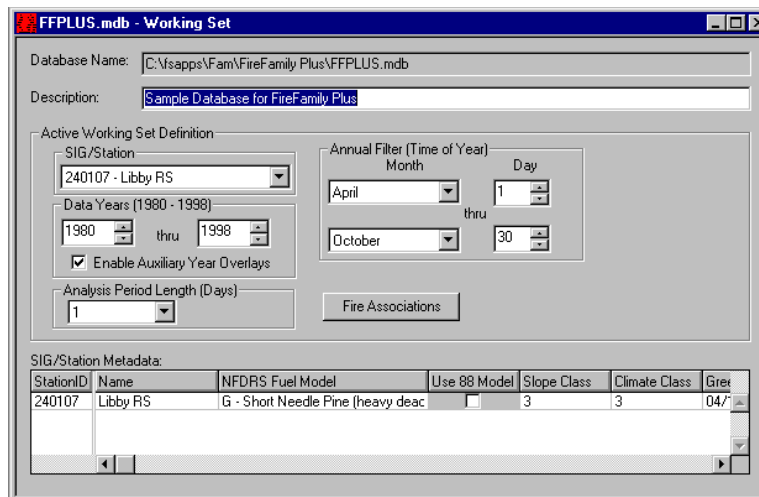
B. From the FireFamily Plus task bar, select **File** and a standard Windows drop down menu will appear. It may contain the names of the default database and also databases created or used recently.



1. Select **Open** from the menu.



2. Click on **FFPLUS.mdb** to highlight the file.
3. Click **Open** to view the working set screen. Yours will probably contain information that is a little different from that shown below. As you work with FireFamily Plus, you will discover that your last choices are reflected in the working set window.



4. Locate the following on the window:
  - a. Database Name – this computer file will always end in .mdb. The default database contains weather and fire data from a station in Montana and a station in Idaho. Users can add more data to the database, or can create their own database.
  - b. Description – descriptive information about the database that the user can supply.
  - c. Active Working Set Definition – includes user selected station, years of data (within the data years available), a check box to allow users to overlay additional data outside the years selected, the time of year for which data will be selected and an analysis period length.
  - d. Fire Associations – a button that will open a window for selecting or viewing fire occurrence data from the area represented by the weather station shown in the active working set definition window.
  - e. SIG/Station metadata – a set of NFDRS station catalog information.
  
5. Examine the information in the “Active Working Set Definition” area of the window more closely. You will see a description of the data set you are going to analyze. It should contain the following:
  - a. SIG/Station name - This field controls the selection of station, or group of stations called a Special Interest Group (SIG), you want to analyze. **Press the down arrow to the right of the field and see which stations are currently in this working set.**



- b. Data Years (Year x – Year y) – This field identifies the years of weather that have been loaded into the working set. The years that appear in the two windows below the Data Years title are the years for which the current analysis will be performed. **Click the small up or down arrow at the right side of year each to increase or decrease the year.** You can also highlight the year and type in one you prefer. Analysis years are limited to the years of data within the working set.
  
- c. Enable Auxiliary Year Overlays – This field allows you to specify whether you want to use data outside the data shown in the Data Years windows. A check in this field activates the function. Most commonly it is used when you want to overlay the current year over a previous set of data, such as this year plotted over the average for the past 10 years. **Click in the small box to the left of the Enable Auxiliary Years Overlays to add and then click again to remove the check mark.**
  
- d. Analysis Period Length (days) – This field allows you to specify the length of time represented by a plotted point. If the value is set at 1, you will get each day plotted individually. If you select a value greater than 1, each data point plotted will represent the average of that number of days. Data is plotted at successive intervals equal to the number specified in this field. This is slightly different than a running mean. **Click the down arrow and scroll down to view the choices.** If you chose 28 days, the analysis is completed by one-month periods.
  
- e. Annual Filter (time of year) – This function allows you to specify the dates (Month and Day) you want to start (top fields) and end (bottom fields). This allows you to analyze data for various lengths of fire seasons or for the full year. **Click on the down arrow to the right of the field under Month to view the month pick list.** Start

and end months are selected from this list. The day of the month is chosen by clicking the up or down arrows under Day or by highlighting the number in the field and entering your choice directly.

- f. Fire Association—This function is one way you can associate fire reports with the working set weather for certain specialized analyses such as relating fire occurrence with historic BI or ERC values. Other methods to associate fires will be described later. **Push the Fire Associations button and view the window that opens. It will show the Northern Region highlighted from the regions list and it will highlight the national forest associated with the particular station listed in the SIG/Station field. Click the cancel button on the Set Fire Association window to close the window without making any changes.**
  
- g. SIG/Station metadata — information describing the attributes associated with the station identified in the SIG/Station field. This is the data that makes up the station catalog or record. The next section will discuss populating this field.

FIREFAMILY PLUS QUESTION 1 — WHAT IS THE DESCRIPTION ASSOCIATED WITH THE DEFAULT DATABASE?

FIREFAMILY PLUS QUESTION 2 — WHAT SIGS and STATIONS ARE INCLUDED IN THE DEFAULT DATABASE?

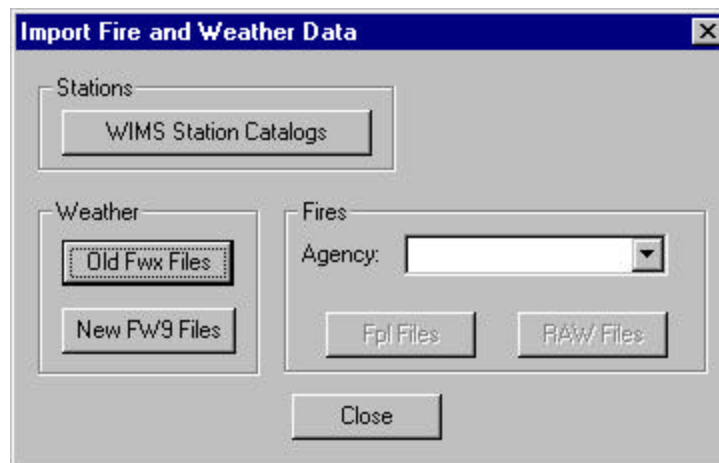
FIREFAMILY PLUS QUESTION 3 — FOR WHAT YEARS ARE THERE DATA AVAILABLE FOR EACH SIG and STATION?

- C. From the FireFamily Plus task bar select **Data**.



The dropdown window should include:

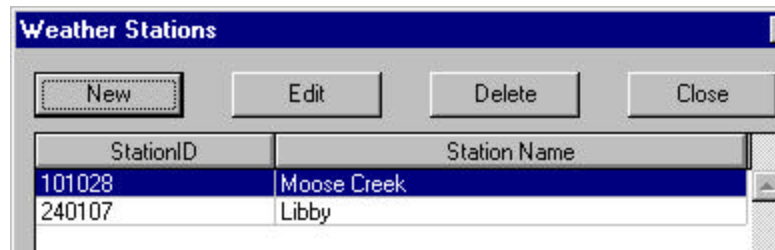
1. Import—This function allows you to import station catalog information, fire weather or fire occurrence from any appropriately formatted file. These files can be obtained from NIFMID using KCFAST routines or from agency prepared CD's or other data sources.



- a. Stations – imports catalog information for weather stations cataloged in WIMS.

- b. Weather—imports weather observations from the National Fire Weather Data Library (NFWDL) from the daily afternoon weather observations entered into the WIMS program.
  - (1) WIMS passes these weather readings to the NIFMID at the end of the year.
  - (2) A consistent set of weather data is available in both daily record and in the historical storage.
  - (3) Weather can be imported in either the old FWX format or the newer format (WXOBS98W or FW9) that includes a 4-digit year.
  - (4) Data is imported rapidly, but without validation.
  - (5) The user must perform validation checking and repair of the data set if necessary.
  
- c. Fires—imports agency specific fire occurrence data.
  - (1) To support the integration of fire occurrence data in FireFamily Plus, the default database is populated with the current organizational structure generically to a level of region/unit/subunit:
  - (2) The program is designed to correctly import a variety of fire occurrence types:
    - (a) Forest Service data is imported from Kansas City as FPL or RAW fire occurrence files.
    - (b) USDI DOI-1202 formatted fire occurrence files, RAW files. DOI data is available on CD-ROM from agency representatives at the National Interagency Fire Center in Boise.

- (c) For non-federal agencies FireFamily Plus has a feature to import custom data allowing the user to tell the program the location of the required fields. The data is then imported as FPL file format.
2. Stations—This function allows you to view a list of the stations assigned to the working set and to perform various functions on the station catalog information.

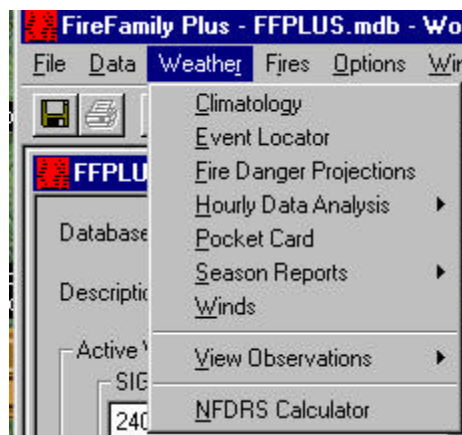


- a. New—A manual way to build a station catalog or record in FireFamily Plus. The user enters the basic station catalog information plus the freeze and green-up dates, and start-up fuel moisture and KBDI values. The start-up values are used in two ways. First, they are used to set the initial values. Second, if there is a break in station observations of more than 30 days, the program will use the values to reset values back to start up levels.
- b. Edit—Allows you to edit information in a station catalog or record that already exists in the working set. In either case the new or edited data will appear in the Station/SIG metadata field of the “Active Working Set Definition” described above.
- c. Delete—This function is used to delete a station from the current database. Both the catalog or station record and any weather observations associated with the station are deleted with this routine.

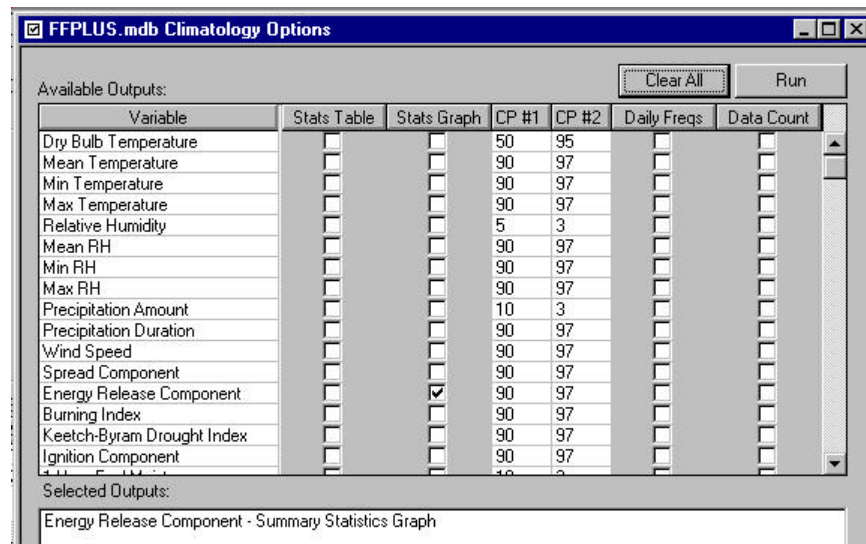
- d. Close – This button will close the Weather Station’s window.
3. SIGS—This function allows the user to group stations into Special Interest Groups, when it is appropriate. Each observation type is averaged across the stations in the SIG. FireFamily Plus uses these averages for graphs and statistics. Stations can be each given a unique weight or importance to the reported average. Special care must be taken when using SIG’s to ensure that station catalogs are specifying the same NFDRS Fuel Model and fuel model set (78 or 88) if meaningful outputs are to be obtained.
  4. Agencies—The standard FireFamily Plus software package contains the basic organization structure for each of the principle Federal Wildland Agencies, as of 1998. The organization structure is used to identify appropriate fire/ weather observation associations when doing specialized analysis. The Agencies Function allows county, state and other federal agencies to establish an organization structure for their own agency.
    - a. USDA-Forest Service levels: Region, Forest, and District.
    - b. USDI-Bureau of Land Management levels: State Office, and Unit.
    - c. USDI-Bureau of Indian Affairs levels: Area, Unit and Agency.
    - d. USDI-National Park Service levels: Field Area and Park.
    - e. USDI-Fish and Wildlife Service levels: Area Office and Refuge.
    - f. Agencies that are not in the default database, such as states, can be added to the data. An Example of a State defined agency would be the Oregon, Klamath-Lake District, and the Lakeview Unit.

5. Compact—This function allows the user to compact data in the files being used by FireFamily Plus. This function is most useful after you have deleted stations or data from the “Active Working Set” or after loading data into existing files. Removing duplicate records and empty spaces, (unused disk space), makes the program run a little faster.

D. From the Windows task bar select **Weather**. A drop down window appears listing several functions that can be performed on the Active Working Set under this option:



1. Climatology—This function allows display of historical information, both weather observations and calculated NFDRS output values, to get a feel for previous conditions or make comparisons between years.



- a. StatsTable—This is a tabular display of mean values, standard deviations, maximum and minimum values, and other information for all dates specified in the Active Working Set.
- b. Stats Graph—This is a two-part graphical display. On the left is a plot of the average and the historical maximum and minimum values for the weather or fire danger element selected for display. On the right is a standard cumulative frequency distribution plot of the average daily values calculated from the information specified in the Active Working Set. In the lower right hand corner of either display is shown the number of observations in the data set used to produce the graphic display.
- c. CP#1 and CP#2—These fields allow the user to include two different critical percentile lines to be overlaid on the graphic displays. These could represent different critical percentage values such as 80<sup>th</sup> and 95<sup>th</sup> or 90<sup>th</sup> and 97<sup>th</sup> percentile climatological breakpoints
- d. Daily Frequency—This display shows the frequency that specific observations occur, the relative percentage of the total that the observation represents and the cumulative frequency of all observations up to that value.
- e. Data Count—This table displays the number of observations available by date for each year in the active working set. It is useful in determining how complete your data set is for making statistical projections.

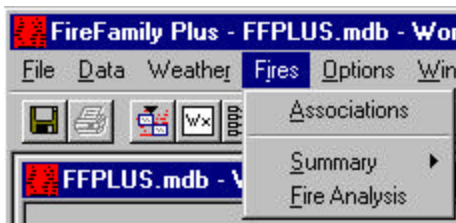
**FIREFAMILY PLUS QUESTION 4. PRODUCE A STATISTICS GRAPH DISPLAY SHOWING THE HISTORIC MAX, MIN, AND AVERAGE OF DAILY DRY BULB TEMPERATURE FOR MOOSE CREEK COVERING THE PERIOD 7/1-9/15 FOR THE YEARS 1988-1997. (Weather > Climatology > Stats Graph for Dry Bulb Temperature). PRINT THE GRAPH (File > Print > Graph in FireFamily Plus) to return with the prework questions.**



**FIREFAMILY PLUS QUESTION 5. HOW MANY OBSERVATIONS ARE USED TO PRODUCE THE ABOVE STATISTICS GRAPH DISPLAY?**

2. Event Locator – a tool for searching for special events or combinations of events based on weather values and /or calculated indices. This tool is useful for searching for rare occurrences, and is also useful for checking for bad or erroneous data.
3. Fire Danger Projections – use historical weather data to project fire danger indices.
4. Hourly Data Analysis – rudimentary analysis of hourly weather data from RAWS weather stations.
  - a. The data is acquired from WIMS in the same FW9 file format as the daily observations.
  - b. Calculates and graphs diurnal fluctuations in fire danger indices and weather values.
  - c. Creates hourly listing of data and indices.
  - d. Exports FARSITE weather and wind files.
5. Pocket Card – a color coded card illustrating current fire danger as it relates to average and important fire seasons.
6. Season Reports – a series of tables useful for weather data analysis.
  - a. Persistence Probability – reports based on the question: Given these conditions, what is the probability of having these conditions tomorrow?
  - b. Severity List – lists all of the occurrences of an index above or below a specified percentile value.

- c. Severity Summary – analyzes cumulative and daily departures of an index value above or below a specified percentile value by time period.
  - d. Probability Analysis – reports based on the question: Given these conditions for variable “a”, what are the chances of having these conditions for variable “b”.
  - e. Daily Listing – lists user selected weather and/or NFDRS outputs.
  - f. Percentile Weather – reports fuel moisture values and wind associated with user-defined adjective class fire danger for a selected variable, often spread component. The output is used in RERAP (Rare Event Risk Assessment Process) analysis.
- 7. Winds – a report of the frequency of wind speed by wind direction.
  - 8. View Observations – a table of weather data, sorted by date, that meet the criteria you have designated in the working set.
  - 9. NFDRs calculator – quick calculation of indices and components from minimal input.
- E. Select **Fires** on the main FireFamily Plus task bar. The three functions shown are part of the Fires analysis functionality of FireFamily Plus.

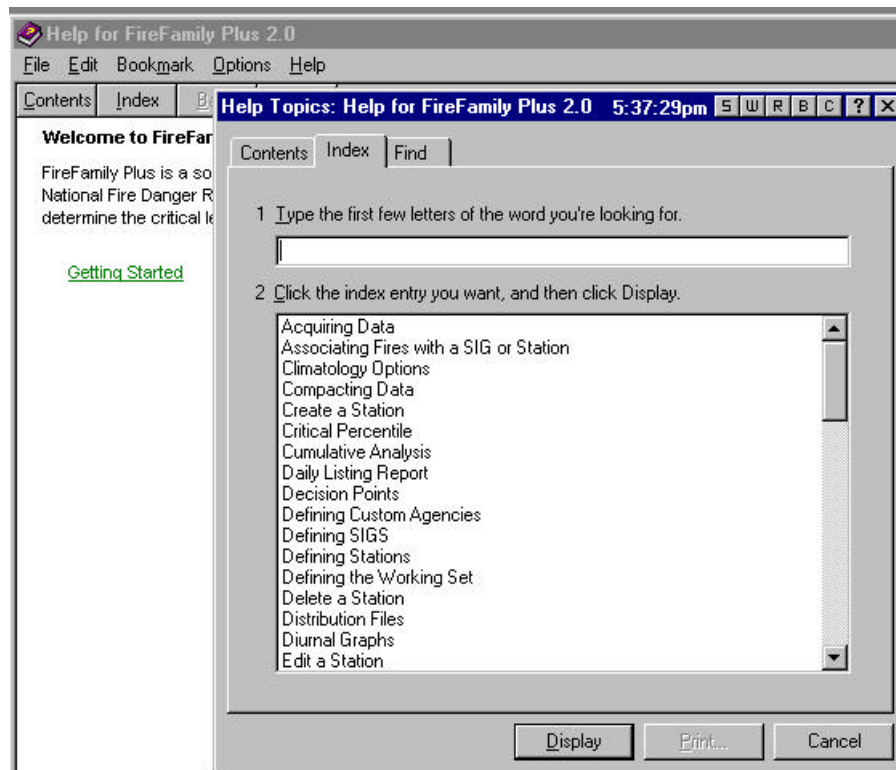


- 1. Associations—This is an alternate way to associate fires with particular weather stations or Special Interest Groups that are specified in the active working set.

2. Summary—This function produces a bar graph display of the fire occurrence by number and acres per year, month, size class, cause class and number of fires occurring on days with fires or the administrative unit identified through the associations function.
  - a. The General option displays data for all years of record in the data set.
  - b. The Working Set displays data for only the period covered by the active working set.
3. Fire Analysis – performs cumulative probability and logistic regression analysis of fire occurrence versus any weather variable or fire index.

**FIREFAMILY PLUS QUESTION 6. WITHIN THE ACTIVE WORKING SET USED IN QUESTION 4, HOW MANY CLASS C AND LARGER FIRES OCCURRED DURING THE PERIOD COVERED BY THE ACTIVE WORKING SET? (Fires > Summary > Working Set)**

- F. Options function on the FireFamily Plus task bar allows you to adjust the graphic display format for the various outputs of FireFamily Plus. These are more advanced applications and will be covered in detail in the course or learned through subsequent use of the program. They include setting line color, style and width, stratifying fires by human or lightning cause, etc.
- G. Windows function on the FireFamily Plus task bar allows the same functions as in any other Windows based application. You can arrange the style of output to be either Cascade or Tile. You can also arrange your desktop icons and close all running applications from this location.
- H. The Help function on the Windows task bar takes you to a FireFamily Plus Help document. You can either locate subjects by going to the Table of Contents or by doing a Subject search.



**FIREFAMILY PLUS QUESTION 7. WHAT IS THE LAST ITEM LISTED UNDER THE INDEX DISPLAY OF THE FIREFAMILY HELP FUNCTION? (Help > Contents > Click on the Index tab > scroll down)**

**FIREFAMILY PLUS QUESTION 8. USING THE HELP FUNCTION, LOCATE INSTRUCTIONS FOR IMPORTING DATA. PRINT THIS DOCUMENT AND BRING IT WITH YOU TO THE COURSE.**

**FIREFAMILY PLUS QUESTION 9. IS THE MOST CURRENT VERSION OF FIREFAMILY PLUS (VERSION 3) LOADED ON THE COMPUTER YOU MAY BE BRINGING TO CLASS? IF NOT, LOAD IT!**



NAME \_\_\_\_\_

**FireFamily Plus  
Prequalifying Work Quiz**

1. What is the default description associated with the database?
  
2. What SIGS and Stations are included in the default database?
  
3. For what years are there data available for each SIG and Station?
  
4. Produce a Statistics Graph display showing the historic maximum, minimum and average daily dry bulb temperature for Moose Creek covering the period 7/1-9/15 for the years 1988-1997. (Weather > Climatology > Stats Graph for Dry Bulb Temperature). **PRINT THE GRAPH (File > Print > Graph in FireFamily Plus) attach it to the back of this page and return with the other prequalifying work questions.**
  
5. How many observations are used to produce the above Statistics Graph display?
  
6. Within the active working set used in question 4, how many Class C and larger fires occurred during the period covered by the active working set? (Fires > Summary > Working Set)

7. What is the last item listed under the Index display of the FireFamily Help function? (Help > Contents > Click on the Index tab > scroll down)
  
8. Using the Help function, locate instructions for importing data. **Remember to print this document and bring it with you to the course.**
  
9. Is the most current version of FireFamily Plus (version 3.X) loaded on the computer you may be bringing to the course? **IF NOT, LOAD IT!**

## **Prequalifying Work Quiz Return Checklist**

### **FAMWEB AND KCFAST**

- ❑ Return the screen capture of the KCFAST User Setup Confirmation window.

### **WIMS FOR BEGINNERS**

- ❑ Return the completed Quiz
- ❑ Return the DIDX and DOBS screen captures for question 12
- ❑ Return the Station Catalog printout for question 13

### **GAINING AN UNDERSTANDING OF THE NFDRS**

- ❑ Return the completed Quiz

### **FUELS AND FUEL MOISTURE REVIEW**

- ❑ Return the completed Quiz

### **FIREFAMILY PLUS TUTORIAL**

- ❑ Return the completed Quiz
- ❑ Return Graph created in Question 4

**REMEMBER TO PUT YOUR NAME ON EVERYTHING YOU RETURN TO INSURE YOU GET CREDIT!**



