

A Web-Based Entry System for National Weather Service Cooperative Observers

# **User's Guide**

Version 0.8 February 2012





#### **WxCoder Users Guide Introduction:**

WxCoder III (WC3) uses more web enhancements than WC2 with help menus allowing observers to submit data more quickly and accurately. WC3 offers a number of improvements for the observer, the National Weather Service (NWS), the Regional Climate Center (RCC), and the National Climate Data Center (NCDC). These offices all work to collect, quality control, and redistribute COOP data. Monthly forms automatically sum and average temperature, precipitation, and snowfall observations. WC3 contains "behind-the-scenes" Quality Control/Assurance (QC/QA) functions to assist the observer in an accurate observation. The program allows the supervising Weather Forecast Office (WFO) to customize the weather reporting criteria for a given station, update user and station information, and assist an observer by entering their observations when they either lose internet connectivity or have personal computer problems.

WC3's QC/QA significantly reduces data errors resulting from manual entry of daily data, keypunch errors, and incorrect administrative information. Examples of some of these checks include:

- Temperature consistency checks (e.g., a minimum temperature cannot exceed a maximum temperature for the same observing period, etc.)
- Precipitation consistency checks (e.g., no negative precipitation values)
- Winter precipitation consistency checks (e.g., if snowfall exceeds three inches, snow depth must increase, etc.)

## WC3's design:

- Provides an efficient, <u>easy-to-use data entry system</u> for participating COOP observers
- Ensures *timely* availability of COOP data for all customers
- Improves data *quality* through automated near-real-time data QA/QC
- Achieves a *paperless* electronic data collection, transmission, and archiving system
- Allows system <u>flexibility</u> to meet demands of integrating data from future observing systems
  and parameters (including phenology—the study of natural events. Examples: the date migrating
  birds return, when spring flowers bloom, and when a lake freezes over in autumn or thaws in spring)

#### **Obtaining a WC3 Account:**

If you already have an account, see the "Signing In:" section below. If not, your servicing WFO establishes an account for you. Your account enables WC3 to identify you at login, tailor the information it presents to you, and give access to other features.

To establish an account, provide your NWS contact with the "Username" you want to use to login to WC3 and an email address. The username you select should contain between 3 and 255 characters in length. You may have any combination of upper and lower case letters, numbers, the "at" (@) sign, and the period. Using your station name as the username makes a great starting point in the selection process.



The email address you provide allows WC3 to send a welcoming message and includes an "Access Code." This access code, along with username, completes the login process. Your servicing NWS office can assist in creating an access code during a visit, or WC3 can generate a random access code. The code from WC3 consists of a set of upper and lower case letters and numbers. After you first login to WxCoder, you may change the WC3 generated access code to one easier to remember.

## Hardware/Software Requirements:

WC3 does not have special hardware requirements. WC3 uses an internet-ready computer connected to either cable, DSL, or a dial-up Internet connection. WC3 needs a functioning web browser like AOL-Netscape, Microsoft Internet Explorer, Firefox, or Safari.

WC3 uses "cookies" and JavaScript to enable some of its features. Cookies and JavaScript are enabled within your browser for WC3 to function. If either cookies or JavaScript are disabled on your computer, WC3 sends a special message page. The page includes information about cookies or JavaScript along with instructions on how to enable either/both for WC3 operation.

## **Signing In:**

If you have access to the Internet, go to the WC3 sign-in page: (<a href="http://wxcoder.org">http://wxcoder.org</a>). When the WC3 page opens (Figure 1), enter your username and access code. If you forget your access code or are accessing the system for the first time, you can click on "Having trouble?" in the sign-in box and provide a username or the e-mail address you gave your servicing NWS office. A new access code arrives via e-mail. Take care to protect your username and access code from non-WC3 user's and reset if it becomes known to non-users. Both your username and access code are case-sensitive. For example, your username is smith. Entries such as SMITH or Smith will fail and prevent you from signing into your account.



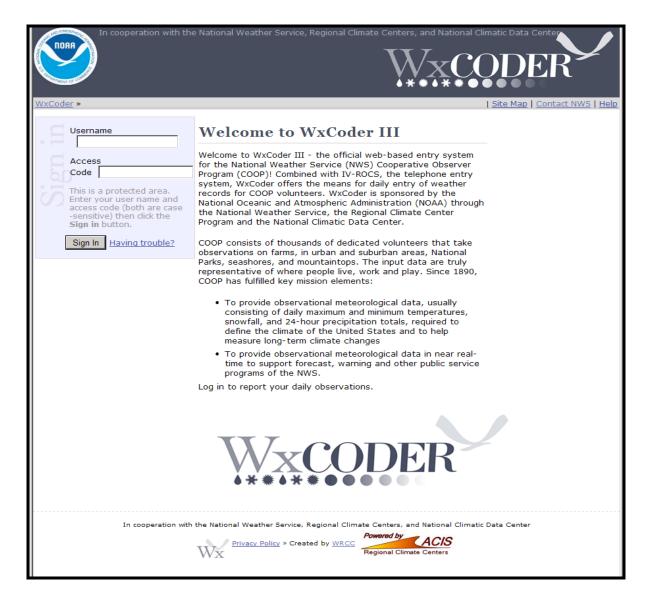


Figure 1: WxCoder Log-in Page

## WC3 Home Page (managing your account):

When WC3 opens after sign-in, it displays the home page. There are a number of key navigation features (**Figure 2**):

- 1.) *Main Menu*: Provides access to observation and information pages.
- 2.) *Time Stamp*: Three dates and times are seen: current date/time; last sign-in; and last observation sent. These serve as a reminder of your frequency of interface use.
- 3.) **Bread Crumb**: This provides a quick snapshot of where you are within WC3.



- 4.) Additional Help: You can find available help throughout the active session pages, including a Site Map, Contact NWS, and Help. Question marks (?) on Figure 7 provide help for individual entry boxes and pull-down menus. To contact your local WFO cooperative administrator, click on "Contact NWS." WC3 provides you with an e-mail address and/or other information to contact your local NWS office.
- **5.)** *Interface Acknowledgments*: Collaboration between NOAA and its Regional Climate Center, along with reference to the Applied Climate Information System (ACIS), are shown at the bottom of all WC3 web-pages.

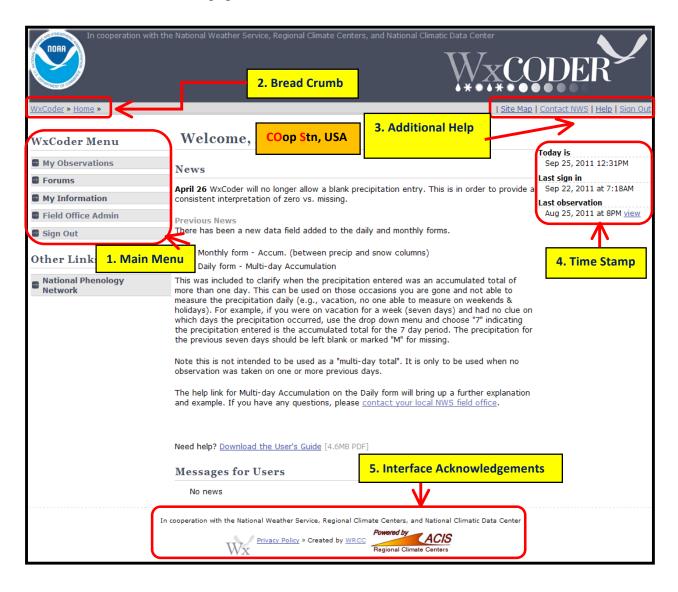


Figure 2: WxCoder Home Page



#### **WC3 Observations Page:**

From the WC3 "Home" page, select "My Observations" from the main menu and you are sent to the entry page for observations (**Figure 3**). This screen allows you to access or retrieve observations. For those with multiple stations a "Change Site" box allows access to the additional station/s.

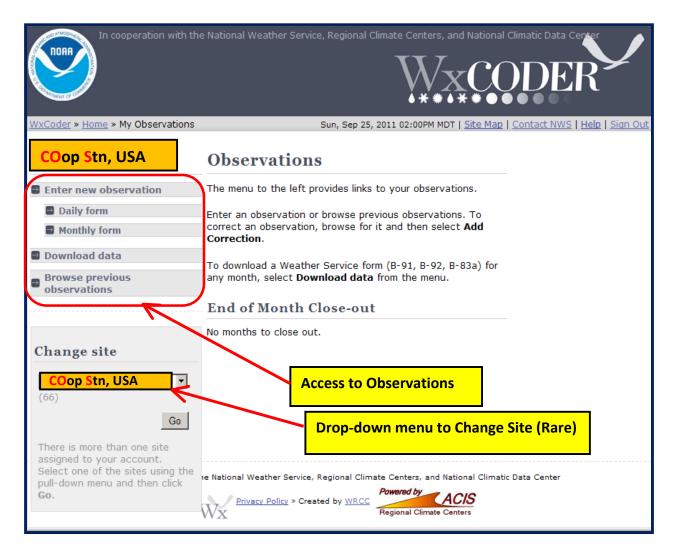


Figure 3: My Observation Page



You can access your NWS Form B-91 observations either for the current month or any previous month using the "Download B-91" menu item (**Figure 4**). You can also download and print a blank form (**Figure 5**) using Windows, Linux, or Macintosh operating systems. **Figure 6** illustrates the data entry sections, including remarks.



Figure 4: Download Data Access



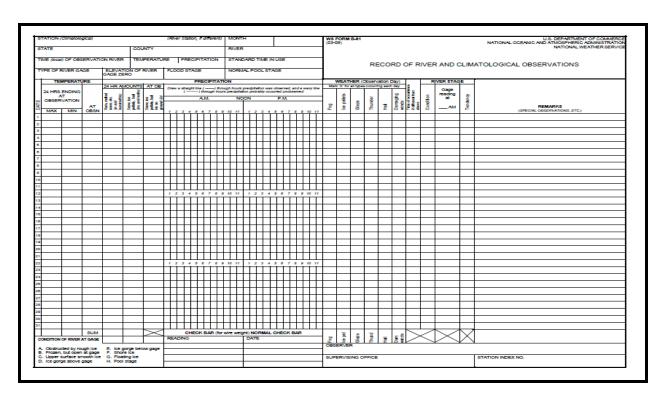


Figure 5: Sample Blank B-91 Form

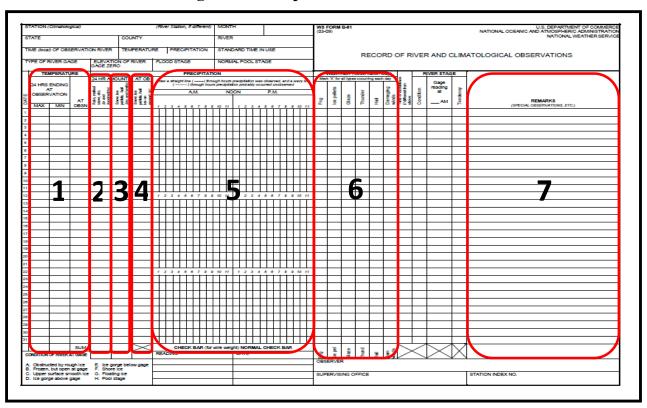


Figure 6: Entries: Temp.; Precip.; Snowfall; Snow Depth; Hours; Wea.; Rmks



#### **Entering Your Data (Example below may vary due to your specific reporting elements):**

**Figure 7** shows the "Daily Observation Page," and the most common page for entering your observation. The following key features can assist in entering your observation:

- 1.) *Station Information*: Provides key metadata (data about the station), including ID, official time of observation, location, elevation, and supervising local NWS office.
- 2.) **Date and Time of Observation**: Defaults to the current calendar day. Your individual observation time spans a 24-hour period. For example: If you report at 8am, then your data spans the 24-hour period from just after 8am the day before to 8 am of the current day. If entering a previous report, change the date using the drop-down menu.
- 3.) *Type of Observation*: Most observers provide information for the 24-hour period preceding their official time of observation. However, you can report additional/supplemental information using the pull-down menu in cooperation with your supervising NWS office.
- 4.) *On-Screen Help*: A mouse-click on a question mark (?), or "help" throughout WC3 provides additional information to assist/clarify the meaning of an entry or element.
- 5.) *Observation Entry Areas*: The seven observation areas in **Figure 6** correspond to entry areas on the NWS Form B-91, as shown in **Figure 7**.
  - *Temperature*: Separate entry boxes for maximum, minimum, and at-observation temperatures. All entries are in whole degrees Fahrenheit. Enter an "M" for missing data.
  - *Precipitation*: For the measurement period (usually the last 24-hours), enter the <u>liquid</u> total accumulation of rain and/or hail, ice pellets, glaze, and snow in inches and hundredths to include the decimal point. Record Trace observations with a capital 'T'. If precipitation is unknown, enter an "M" for missing data. However, when entering a number of preceding days of precipitation, one may wish to use the "Monthly form." This becomes a three-sequence (Subsequent) process:
    - a. First, open the "Monthly form" and unlock each date with no entry for precipitation (click on the padlock icon the lock turns green when open). Once the day(s) open, enter an "S" in the (each) precipitation block(s).
    - b. Now click on the drop-down menu under "Accum." Column for the <u>current day</u> and enter the number of days with no report plus one (you need to include the current day). See **Figure 8** for an example.
    - c. Finally, click the "Save" button. You now need to "Confirm" each of the day(s) you had open.

**NOTE:** You can also make these entries using the "Daily form." Each day you wish to enter an "S" opens separately. This takes much longer to complete than using the "Monthly form."



- **Snowfall**: For the measurement period, enter the total of newly fallen snow in inches and tenths, including the decimal point. For trace observations, enter a capital 'T'. If none, enter zero (0.0).
- **Snow Depth**: At observation time, enter the average depth (accumulation) of all snow and other frozen precipitation on the ground in the vicinity of the station in whole inches. Record trace observations with a capital 'T' (for an average depth greater than zero but less than one-half inch 0.5"). If no snow depth, enter a zero (0).
- **Precipitation**: Indicate each hourly period when you notice/suspect precipitation fell over the course of your 24-hour reporting period. The number in each block indicates the start of the hour (e.g., 6 AM represents the period 6:00 6:59).

First, select the appropriate "Observed" or "Estimated" radio button.

**Next**, click the block for each hour corresponding to precipitation occurrence. Two calendar days are shown to allow you to enter precipitation occurring <u>after</u> your observation time yesterday, to this morning's observation. **Figure 7**, section 5, highlights the period for the current morning's report.

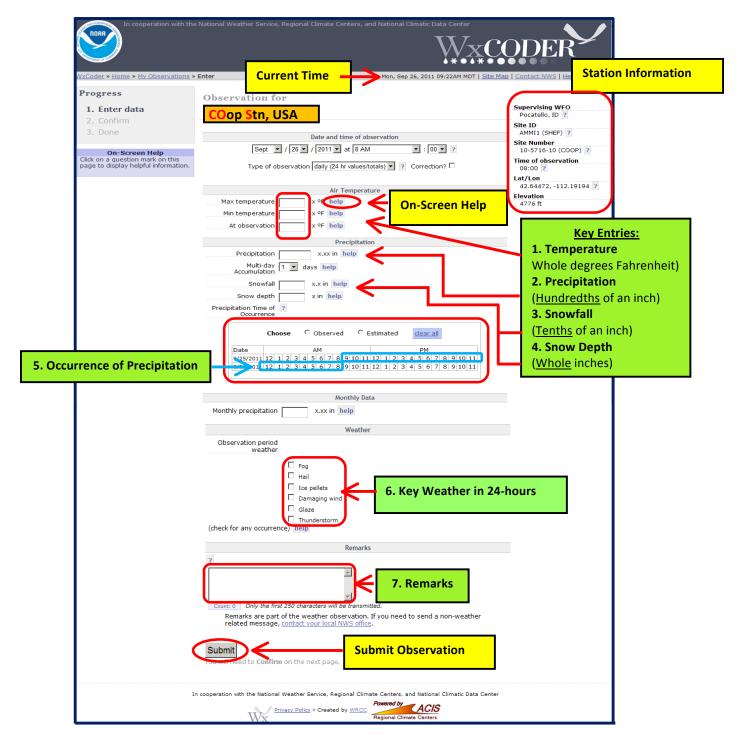
- *Key Weather in Past 24-hours*: Click the appropriate box(s) under the "Weather" column when Fog, Hail, Ice pellets, Damaging wind, Glaze, and Thunderstorm occur within your reporting period.
- **Remarks**: Enter any additional notes about phenomena not a part of the B-91 form. Common examples include sky condition (cloud coverage, cloud type, optical phenomena), astronomical (e.g., eclipses), seismological (e.g., earthquakes), phenology (e.g., killing frost, status of leaves, blooms, pollens, etc.), river conditions, details about weather entries (e.g., hail size), or other observations of the natural environment
- 6.) *Submit*: When all observation entries are complete, click the 'Submit' button. Your entries now undergo an evaluation for quality. WC3 displays any errors or entry omissions where corrections/additions are necessary before WC3 accepts the observation.

The most common error, using the reporting period in **Figure 7** (8am): yesterday's "At obs" temperature has a value lower than this morning's low temperature. Simply replace your current morning's entry with yesterday's "At obs" temperature.

**Remember**, you are reporting a 24-hour period, not a calendar day (exception: you report at midnight).

**NOTE:** Many observers often enter their current morning minimum temperature in "Remarks" to indicate occurrence of the true 24-hour value (e.g., Yesterday's "At obs" temp = 32; Today's "Remarks" entry: AM low 40). If you report in the afternoon/evening, the example above applies, normally, to your maximum temperature occurring within your 24-hour reporting period.





**FIGURE 7: Daily Observation Entry Page** 



## **Retrieving Data:**

**Figure 8** shows the "Monthly Observation Page." This page allows you to view your data from a monthly viewpoint while entering/editing daily values.

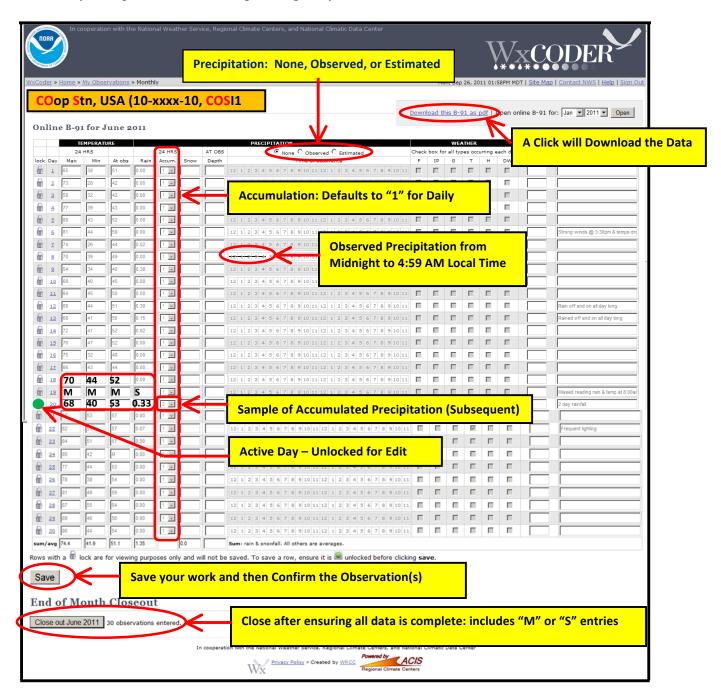


Figure 8: Monthly B-91 Form with Sample Entries

#### **Observation Confirmation:**



Once you "Submit" an observation from either the daily, or monthly observation entry page, a final display allows you to check the data before final confirmation. This confirmation step ensures against typographical errors and provides an opportunity to make any necessary corrections. Review all elements and make appropriate corrections using the "Make corrections" button) before submission. **Figures 9 and 9a** show Daily and Monthly examples of observations under review before confirmation. The Monthly confirmation window may have multiple entries. Click the small "Confirm" box next to each entry before clicking "Confirm All Checked."

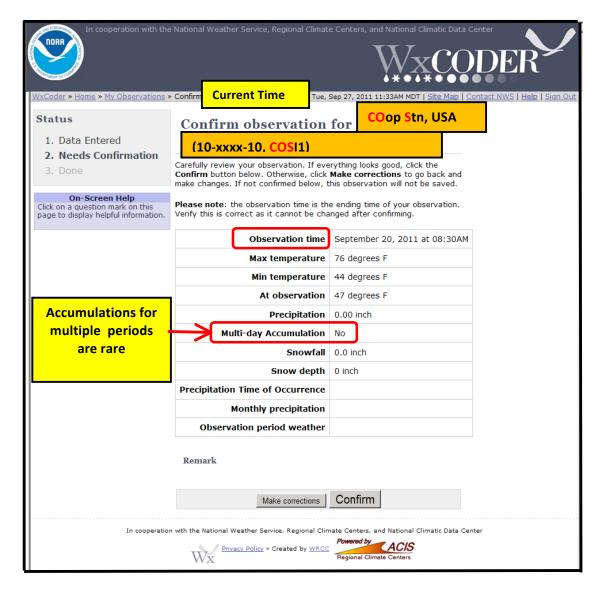


Figure 9: Daily to Confirm Example



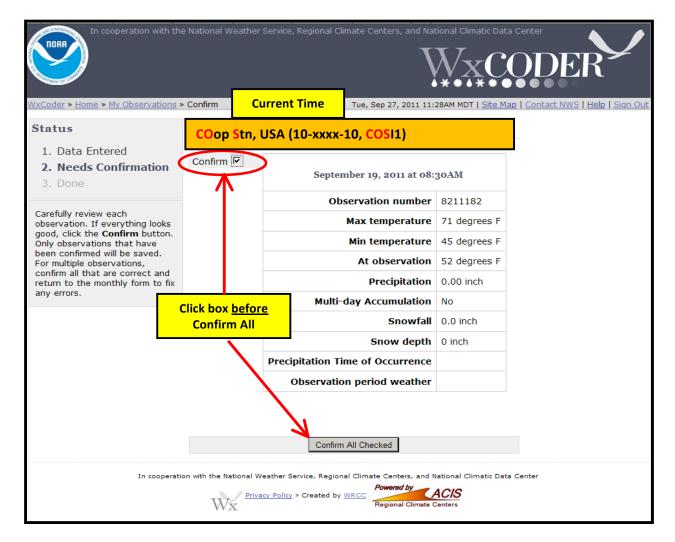


Figure 9a: Monthly to Confirm Example

Once you confirm, WC3 returns to the 'My Observations' page when using the daily input as shown in **Figure 10.** When using the "Monthly Form," "the confirmation statement displays on the "Confirm page" as shown in **Figure 10a**.

For the monthly format, one may have several days to enter to either bring to currency or to fill in a missed entry. As a suggestion, when a month ends, open the "Monthly Form" to view your observations. Missing observation(s) are quite noticeable. Simply click on the lock, make your entry, "Save," and "Confirm." This quality control check ensures completion of a monthly set of daily data and emphasizes the importance of documenting all observations on a paper B-91 (booklets of these forms are available from your supervising WFO).



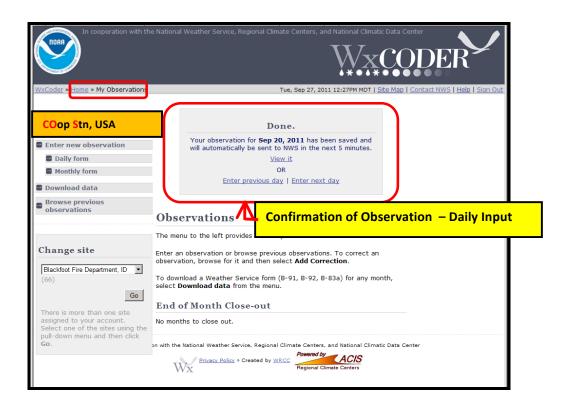


Figure 10: Confirmed Daily Observation

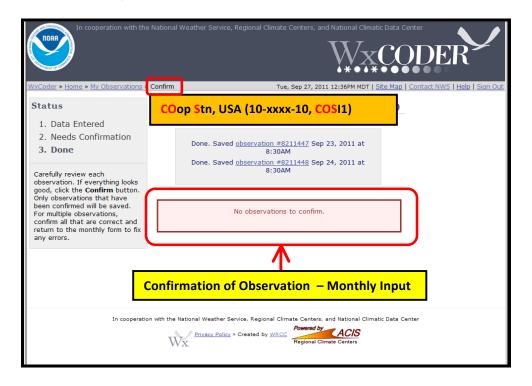


Figure 10a: Confirmed Multiple Monthly Observations



## **Signing Out:**

To sign out of an active session of WC3, click on "Sign Out" in the upper right-hand corner of the Confirmation page (Figure 10 or 10a). WC3 returns you to the home page (Figure 11) with a message, in red, indicating success in signing out of WC3.

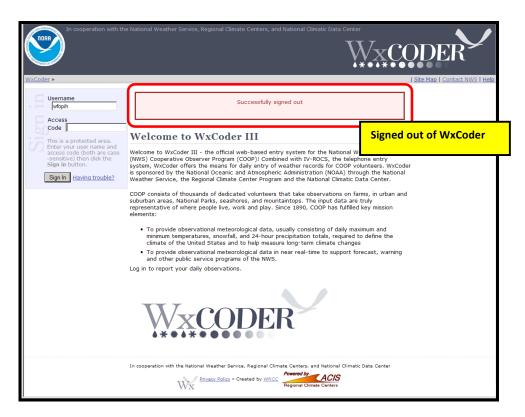


Figure 11: Signed Out of WxCoder

