WxCoder II

A Web-based data entry system for observers

Users Guide

Version 1.0

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Introduction

Cooperative observer data has traditionally been collected and transmitted to the National Weather Service by telephone. While the method has been effective, it not only requires significant time but also fails to take advantage of more sophisticated methods of data entry and transmission generally available through use of the Internet.

In 1999 WFO Chicago took a significant step in opening the use of the Internet to cooperative observers across the central United States. The result of the effort was the introduction of an Internet-enabled data entry system called WxCoder (***W***eb ***X***mitted ***C***ooperative ***O***bserver ***D***ata ***E***ncoded ***R***eport). Though an advancement, WxCoder only made the first step. Entry forms were cumbersome, error feedback was confusing, and data retrieval was non-existent..

WxCoder II is a major and substantial enhancement to previous methods of data entry for observers. While addressing the shortcomings of its predecessors, WxCoder II breaks new ground with the introduction of a multi-function database. By combining the power of relational database technology with the Internet, WxCoder II provides information services that neither can deliver alone. Major improvements are provided for both the observer and the NWS; significant new features for both are added.

For the coop observer, WxCoder II provides substantial improvements in data entry. The entry form is clean and concise. Through the use of the WxCoder database and dynamic content technology, data entry now occurs through a one-page, customized form – no need for the observer to muddle through pages of non-pertinent entry blanks. Persistent, site-specific data is automatically presented on the form; no need for repetitious, daily entry.

For the NWS, the introduction of the WxCoder database is a major enhancement to coop observer data collection, processing, analysis, and presentation. The collected data no longer serves one purpose. It is available for multiple uses – automatically generating summaries and reports, direct forwarding to NCDC.

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Introduction

If you have access to the Internet, you can now send your observation to the National Weather Service using a Web-based data entry form. It's easy, accurate and fast!

Here's how WxCoder works…

- Connect to the Internet using your cable, DSL or dial-up connection and surf to the WxCoder login page
- After entering your username and user identifier, you are presented with a data entry page that is customized for your observing location. All routine data (e.g., station location, date/time of your observation) are pre-entered for you; all you need to do is enter your observed data
- After a check for errors, WxCoder stores your observation in its database and sends it on to the National Weather Service. That's it!

WxCoder provides many features and advantages over telephoning your reports in or using the ROSA system.

- Wxcoder provides a friendly, intuitive interface for entering your observation
- WxCoder provides context-sensitive help for all your data entries
- WxCoder performs data format/quality checks to insure your data is sent correctly and completely
- WxCoder allows you to retrieve and download your data from its database as an Acrobat file or an Excel spreadsheet
- WxCoder allows you to update your station information (e.g., user identifier, email address) without having to notify the National Weather Service
- WxCoder provides email access to the cooperative program manager at your local National Weather Service office

WxCoder Operation

Obtaining a WxCoder account

To use WxCoder you must have a WxCoder account. Your account will be established by the person you normally contact at your local NWS office. Your account enables WxCoder to identify you when you login, to customize the information on the pages it presents to you, and to provide access to WxCoder's other features.

To establish an account you will need to provide your NWS contact with the username you want to use to login into WxCoder. You will also need to provide an email address.

Your email address is a valid username.

The username you choose must be between 3 and 255 characters in length. It can contain any combination of upper and lower case letters, numbers, the 'at' sign (@), and the period. Your username must be unique within WxCoder. If the username you have

chosen already exist in WxCoder, you will have to choose a different one. At the present time WxCoder does not allow you to change your username once your account has been established.

The email address you provide to your local NWS contact is used to send you a welcoming message that includes a 'user identifier.' Your user identifier is needed along with your username to complete the login process. Your user identifier will be generated at random by WxCoder. It will consist of a random set of upper and lower case letters and numbers. After you first login to WxCoder, you may change your identifier to one that is easier for you to remember or that matches passwords you use with other Internet accounts.

Hardware/software requirements

WxCoder has no special hardware requirements. WxCoder uses your normal cable, DSL or dial-up Internet connection.

Because it uses 'advanced' features to generate its pages, WxCoder must be used with recent versions of the common browsers. In general, any browser that supports DHTML can run/display WxCoder. In particular, WxCoder runs best on Internet Explorer version 5.5 or later or Netscape version 7.0 or later. It is best viewed at a screen resolution of 800 x 600 or higher.

It is a common, but erroneous, belief that cookies can be dangerous. In fact, they pose no threat to you. As documented, they will not format your disk or send back information about you or your system

WxCoder uses a 'cookie" to save information that makes it easy to move from page to page and remember what you had done on previous pages. Cookies must be enabled on your browser to be able to use WxCoder. The cookie is not written to your computer's hard drive but rather is kept in its memory. When you logout, the cookie is deleted from your computer's memory and no trace of your WxCoder session is kept.

WxCoder also uses JavaScript to enable some of its features. Like cookies, JavaScript must be enabled within your browser to be able to use WxCoder.

If either cookies or JavaScript are disabled on your computer, WxCoder will send a special message page. The page includes information about cookies or JavaScript along with instructions on how to enable either/both for WxCoder operation.

Logging in

To log in to WxCoder, point your browser to the address provided in your welcoming email. You will be presented with WxCoder's login page. Enter your username and user identifier in the appropriate boxes and click the *Login* button (Figure 3). Both your username and user identifier are case-sensitive – be sure to use upper and lower case letters as they were provided in your welcoming email. For example, if your username is *smith*, entries such as *SMITH* or *Smith* will fail and your login will be unsuccessful.

You can advance from the username to user identifier entry box by using the ENTER key. Striking ENTER again after entering you user identifier will complete the logon process.

If your login is successful, WxCoder will present a data entry page customized for your site. If unsuccessful, WxCoder will display an error message above the login box explaining the problem encountered;

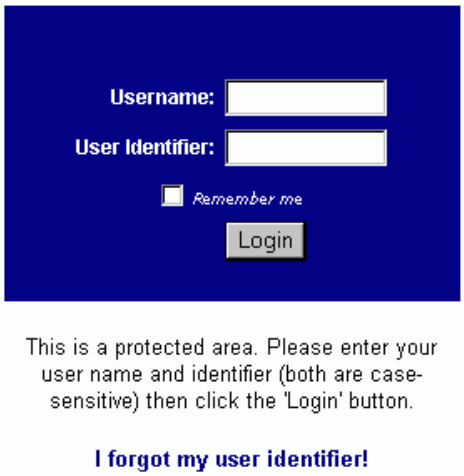

Figure 1

you will be asked to try again.

WxCoder only allows four attempts at login before it locks your account. Locking the account means that no further access to the account will be granted until your local NWS contact is notified of the problem and takes the steps necessary to unlock the account. If you find your account locked and you have not caused that to happen, please notify your NWS office immediately -- there may have been an unauthorized access to your WxCoder account.

If you forget your user identifier, click on **I forgot my user identifier!** near the bottom of the page. You will be taken to a page which asks you to enter your username. WxCoder will lookup your user identifier and send it to your email address on record immediately.

Although there is no requirement to complete your WxCoder session in a set period of time, a WxCoder session will 'time out' in five minutes. If there is no input from you within that time, WxCoder will automatically log you off. When you try to proceed with some task, you will be returned to the login page with a note that **Your session has timed out! You must login again!** You will be required to log back in. Any data or information that was not submitted/saved will be lost.

It is suggested that you do not use the Remember Me ***feature if you are using a public access computer .***

WxCoder implements a *Remember Me* feature on its login page. If the appropriate box on the login page is checked, WxCoder will store your username and user identifier in a 'cookie' on your computer's hard disk. If you choose the *Remember Me* option, anyone who uses your computer and surfs to the WxCoder login page can gain access to WxCoder and your account information. If this is of concern, you should ensure that the *Remember Me* box is unchecked.

The WxCoder menu bar

Near the top of each WxCoder page is a menu bar (Figure 2) that allows you to navigate to WxCoder's various features. The selections on the menu bar include *Enter your observation*, *Reports*, *Your WxCoder account*, *Contact Us*, and *Help*. Clicking on any of the menu bar entries will immediately take you to the appropriate WxCoder page. (***Note:*** *Any information entered on a page that has not been submitted/saved will be lost*.)

Figure 2

The function of each menu bar entry is

- *Enter your observation*: Selecting this option takes you to the data entry page; you are taken to this page by default upon login
- *Reports*: Selecting this options takes you to the WxCoder page that allows you to download your data for past days/months; your data is available as an Acrobat version of the paper form you may be used to filling out or as Excel spreadsheet data
- *Your WxCoder account*: This page allows you to change information associated with your WxCoder account; this is where you go to change your user identifier and/or your email address
- *Contact Us:* Clicking this menu bar option opens your computer's email client and allows you to send an email to your local NWS contact; the 'to' portion of the email will be pre-filled with the correct address
- *Help:* This menu bar option opens a help window that describes the general features of WxCoder and the functions available by selecting the options on the menu bar.

Entering your data

By default, WxCoder takes you to your data entry page upon login. The page is generated and customized for your observation site.

The top portion of the page contains information about your observation. WxCoder 'knows' what site you are reporting from when you login and builds the page to include that information. WxCoder fills in and selects the date/time of your observation and the type of observation based on your regular reporting time and its best guess as to what observation you might be entering. You may change WxCoder's choices by entering/selecting the information that describes your observation in the appropriate entry boxes.

If your observation is a correction (specified by selecting 'correction to previous ob' in the *Type of observation* box), WxCoder will present a dialog box (Figure 5) that offers to retrieve your 'wrong' observation from its database and fill in the data entry form for you – no need to re-enter all your data.

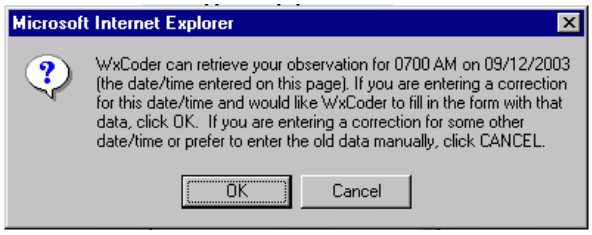

Figure 3

Enter your observational data in the appropriate entry boxes in the *Enter your data* section of the form. Some elements (e.g., surface frost) may require a selection from a dropdown box; others (e.g., calendar day weather) will require that you make choices by clicking the appropriate checkboxes.

WxCoder provides context-sensitive help for each data element you enter. The help feature can be invoked by clicking the question mark glyph to the right of the entry box. In response to you request, WxCoder will open a popup window that contains information about the data element you are entering. Click the *Close Window* button to dismiss the popup.

You may find this a convenient way to request supplies or note any difficulties you are having with your station or observations.

WxCoder provides you with the opportunity to send an email to your local NWS contact by checking the *I'd like to send an email to the program manager* box near the bottom of the form. When checked, the box will open a text area where you may enter a message. The message will be sent right after WxCoder transmits your observation. The message will not be sent as part of your observation.

When you have completed your data entry, click the *Submit Data* button. Before storing your observation in its database or transmitting it, WxCoder will check it for errors -- does the entry contain valid characters, does the data fall in a valid range, is the data consistent with other entries on the form. If WxCoder finds an error, your data entry page will be returned with all its data. The errors encountered will be noted at the top of the data entry portion of the form along with a small warning glyph next to the questionable entry. You must correct the errors and resubmit your data to proceed.

If your data pass WxCoder's data validation, your observation will be stored in the WxCoder database and transmitted to your local National Weather Service office. A 'success' page that contains a summary of your observation will be displayed.

Managing your WxCoder account information
Selecting *Your WxCoder account* from the menu bar takes you to a page that allows you to add, update, and delete information about your WxCoder account. The only data on the page that is required are your username and email address. All the other information is optional; you may include as much or as little as you wish WxCoder to keep.

You are encouraged to keep your name and address complete and current. Your local NWS contact can use the entries here as a source when sending you information and supplies through the US mail that may be needed at your site.

Changing your user identifier
Although WxCoder generates a user identifier for your first login, you may change it at any time. Simply enter your new user identifier in the *New user identifier* entry box on the account page. You must verify the user identifier by entering it again in the *Confirm user identifier* entry box. When you are finished with changes/updates to your account on this page, click *Submit*. All changes are effective immediately. You may use your new user identifier the next time you login.

Retrieving your data
WxCoder allows you to retrieve your past data for downloading from its database. You may receive the data as an Acrobat version of the paper form you may be used to filling out (e.g., WS Form B-91, *Record of River and Climatological Observations*) or as an Excel spreadsheet data.

Contacting the National Weather Service
You may send an email to your local National Weather Service office contact by clicking *Contact Us* on the WxCoder menu bar. Clicking this menu bar option opens your computer's email client and allows you to send an email to your local NWS contact; the 'to' portion of the email will be pre-filled with the correct address.

You may also send an email to your local NWS contact by checking the box near the bottom of the data entry page. When checked, a text edit area will open that allows you to enter your message. The message will be sent right after WxCoder transmits your observation.

The logout page
When you logout you will be taken to this page. Your local NWS office may post an informational or instructional message here.

You are encouraged to logout of WxCoder. Logging out removes the in-memory cookie WxCoder used to help you move easily from page to page as well as performing internal cleanup in the WxCoder database.

Frequently Asked Questions

Q: *All I get is 'garbage' (or the page is blank) when I go to the WxCoder login page.*
A: Because it uses 'advanced' web page features to generate its pages, WxCoder must be used with recent versions of the common browsers. In general, any browser that supports DHTML can run/display WxCoder. In particular, WxCoder runs best on

Internet Explorer version 5.5 or later or Netscape version 7.0 or later. WxCoder does not support Netscape version 4.7.

Q: *How do I change my user identifier?*

A: To change your user identifier you must first logon to WxCoder using your 'old' user identifier. Once logged in, you will automatically be taken to the data entry page by default. Click on *Your WxCoder account* in the menu bar near the top of the page. You will be taken to the account page. Enter your new user identifier in the *New user identifier* entry box on the account page. You must verify the user identifier by entering it again in the *Confirm user identifier* entry box. When you are finished, click *Submit*. All changes are effective immediately. You may use your new user identifier at your next login.

Q: *What if I forget my user identifier?*

A: If you forget your user identifier, go to the WxCoder login page. Near the bottom of the page you will see the phrase **I forgot my user identifier!** Click on it. You will be taken to a page which asks you to enter your username. WxCoder will lookup your user identifier and send it to your email address on record immediately.

Q: *What does is mean when WxCoder says* ***Your account is locked!***

A: Wxcoder limits the number of times anyone can unsuccessfully attempt to access an account. Locking the account means that no further access to the account will be granted until your local NWS contact is notified of the problem and takes the steps necessary to unlock the account. You will receive an email then when the account is unlocked.

Appendix A: WxCoder User Page Screenshots

Figure 4: The WxCoder login page

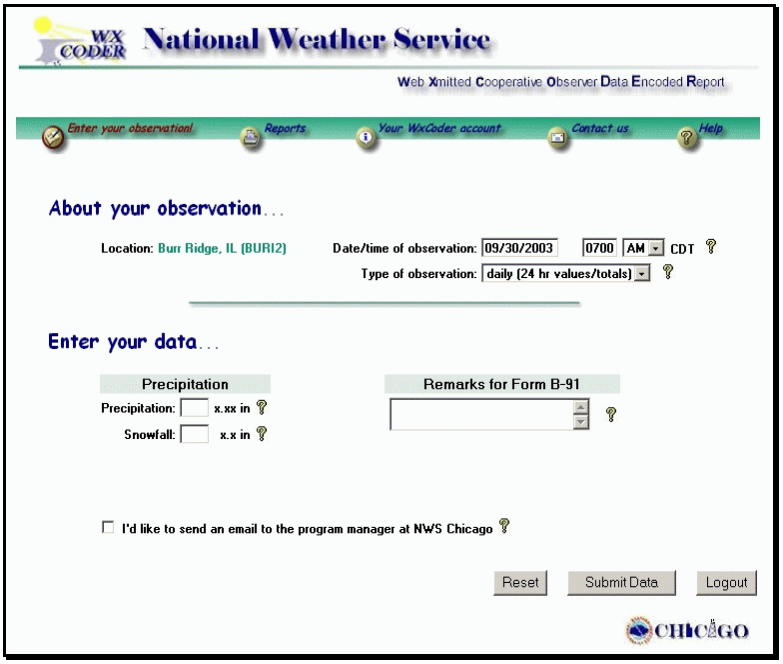

Figure 5: A WxCoder data entry page

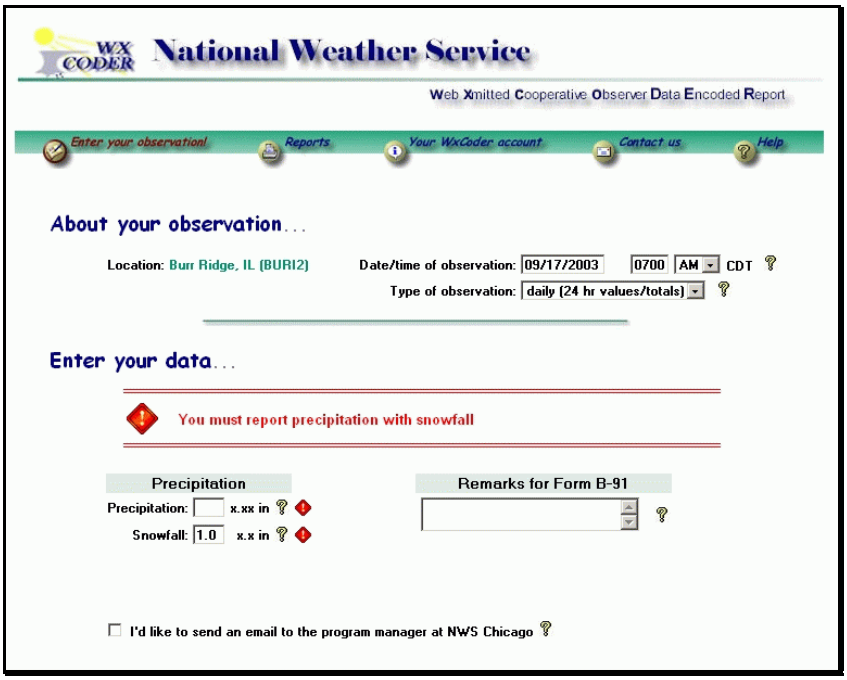

Figure 6: A WxCoder data entry page with errors

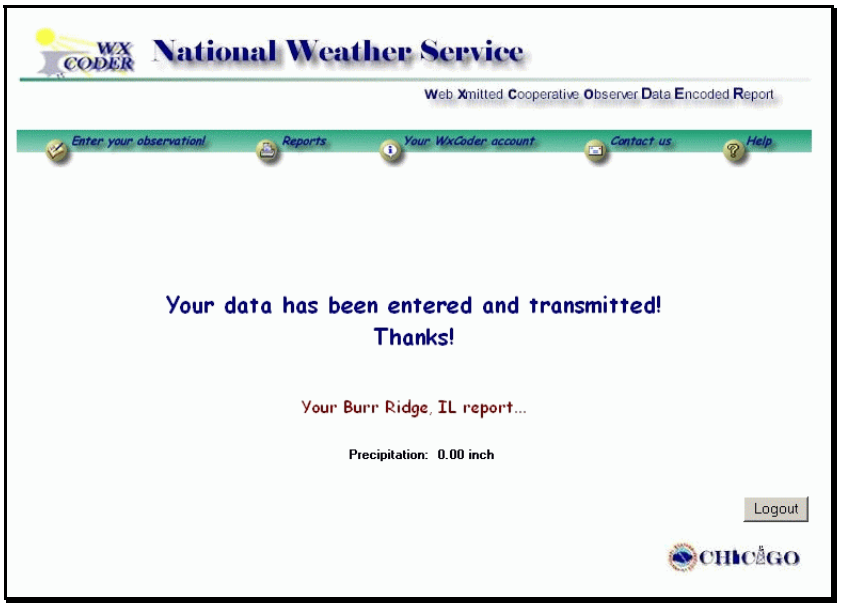

Figure 7: A WxCoder 'success' page

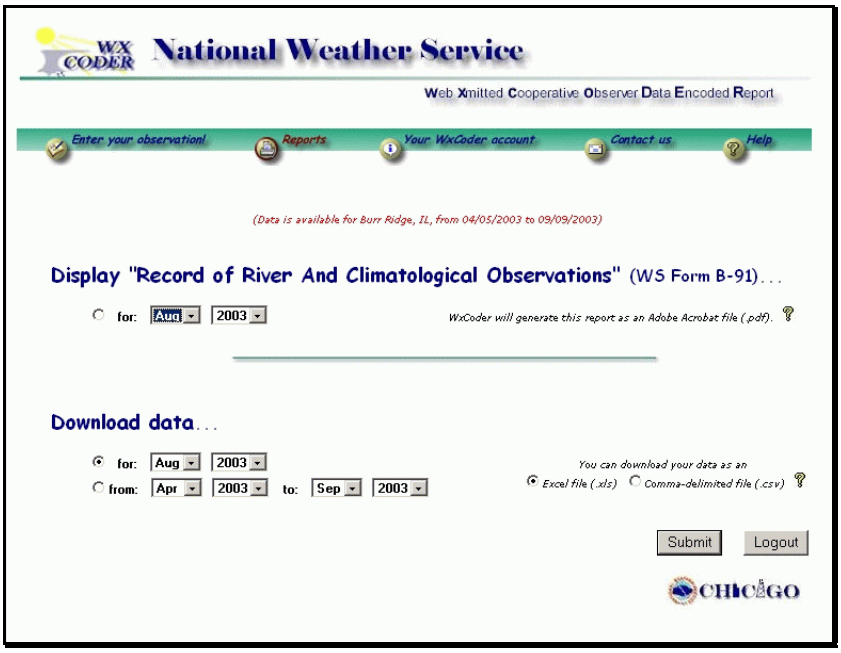

Figure 8: A WxCoder reports page

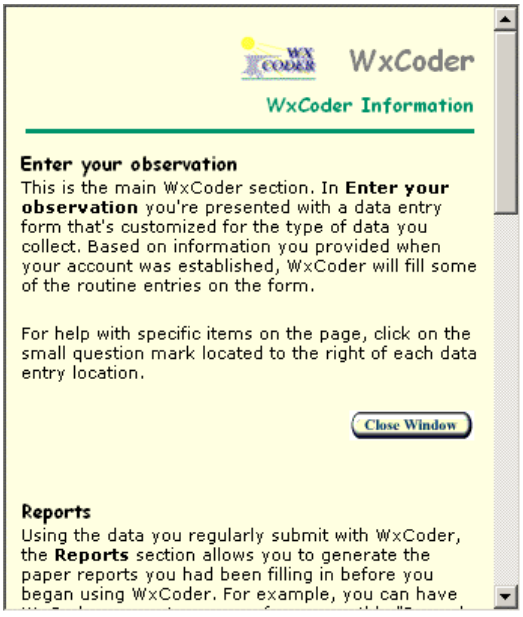

Figure 9: WxCoder top level help

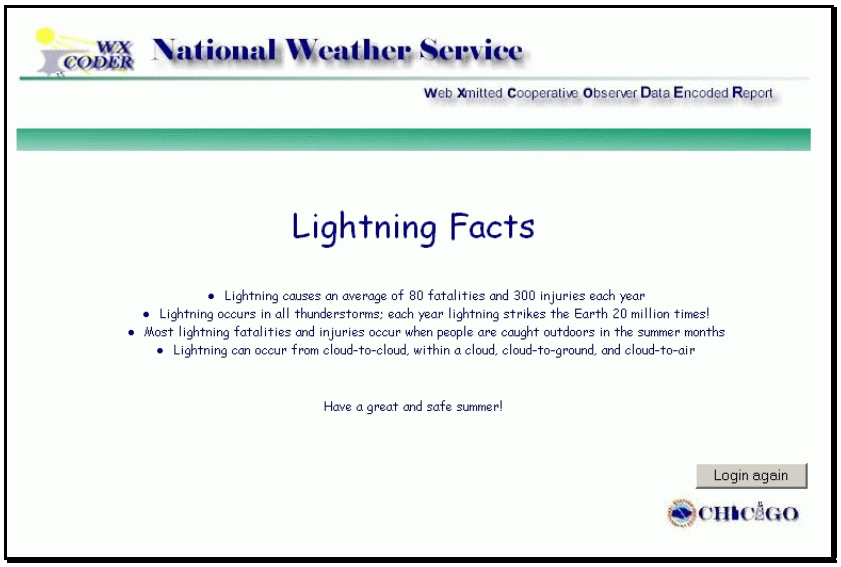

Figure 10: A WxCoder logout page