

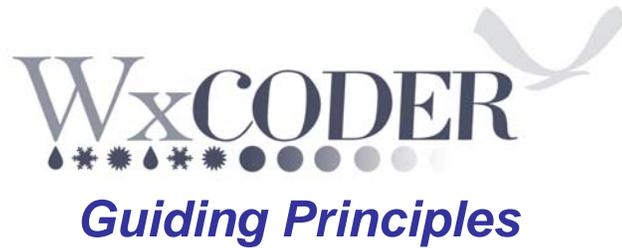


A Quick Overview

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As most of you know, the idea of moving to a paperless transmission of COOP data environment was proposed about a year ago. Draft requirements were established and sent for coordination, and a solution was proposed for moving the operational capability into operations at partner facilities (NCDC and RCCs). Along the way, there have been some communications lapses and other impediments to moving the total paperless environment forward. I am happy that we can all be here today to move this process forward. I am proud of what we have been able to do on the web side and look forward to more progress on the telephone side.



- Provide efficient, easy-to-use data entry system for participating COOP observers,
- Ensure timely availability of COOP data for all customers,
- Improve data quality through automated near-real-time data QA/QC,
- Achieve a paperless electronic data collection, transmission, and archiving system.
- Allow system flexibility to meet demands of integrating data from future observing systems and parameters (including phenology)

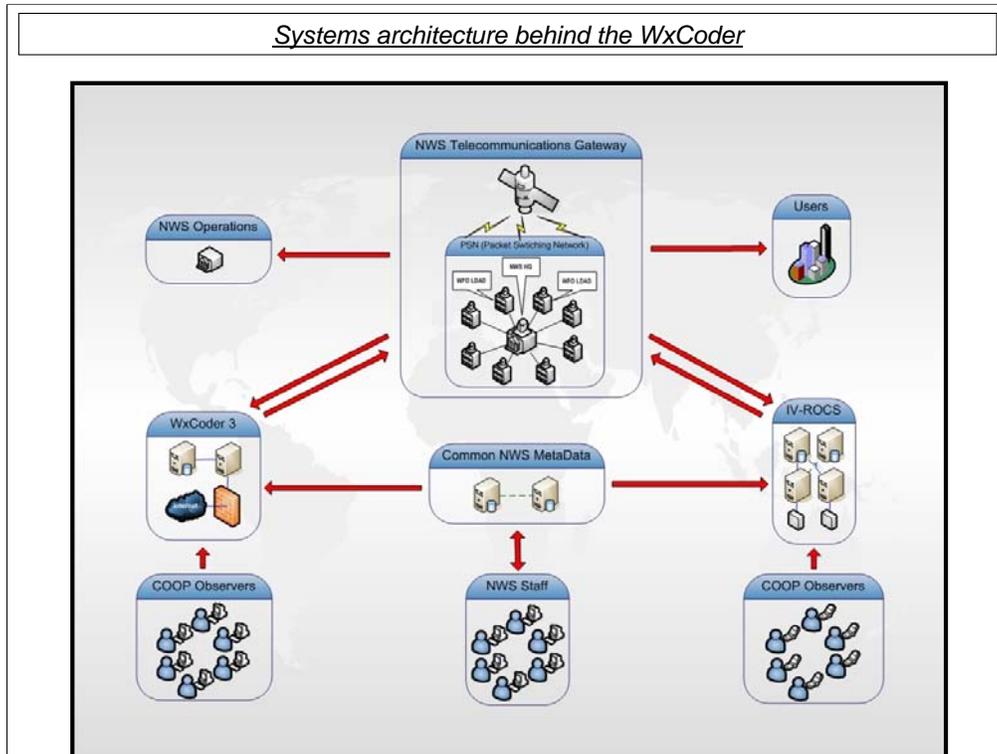


What is WxCODER ?

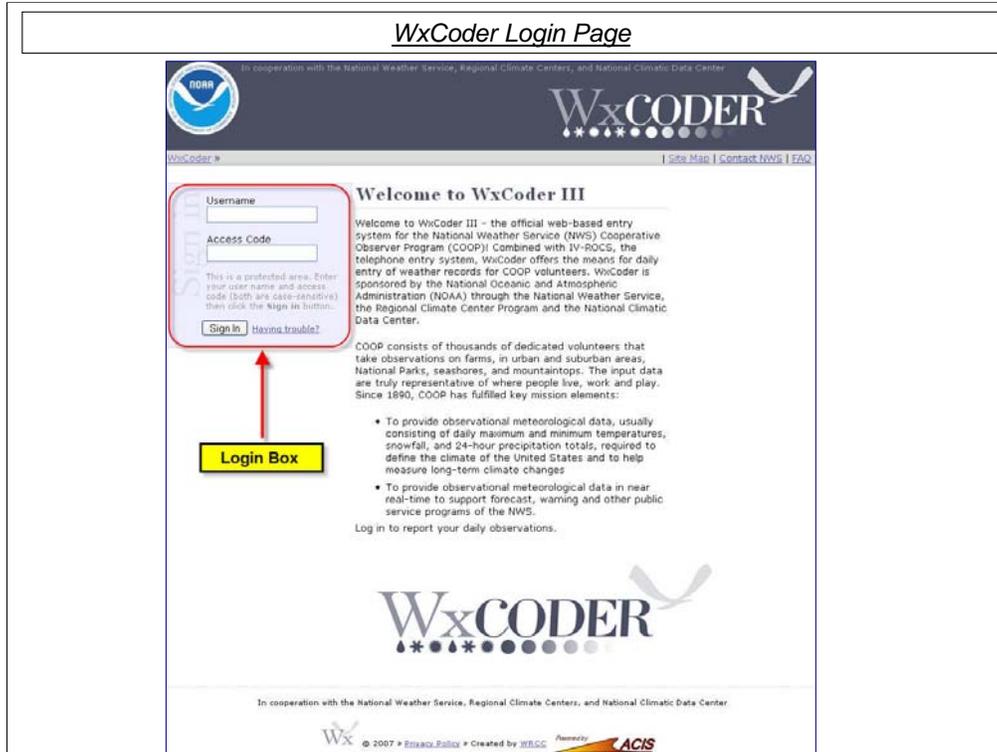
WxCoder stands for ***Weather Transmitted Cooperative Observer Data Encoded Report***. Building upon the experiences of previous data entry systems, and leveraging the experience of the *Community Collaborative Rain, Hail and Snow Network* (CoCoRAHS) and the Environment Canada's *Cooperative Online Temperature and Precipitation Entry System* (COOLTAP), NWS and NCDC, in cooperation with the Regional Climate Centers (RCC), are developing a nationally-supported Web-based data entry system called WxCoder III.

Unlike previous efforts, this system will have **national** projection and will supersede B-91 paper form submissions. WxCoder III is NOAA's exclusive method for obtaining electronic Cooperative Observer Network (COOP) data through a internet-based interface in near real-time. It is based in the Regional Climate Centers and communicates with IV-ROCS, a telephone method of receiving COOP data electronically.

Systems architecture behind the WxCoder



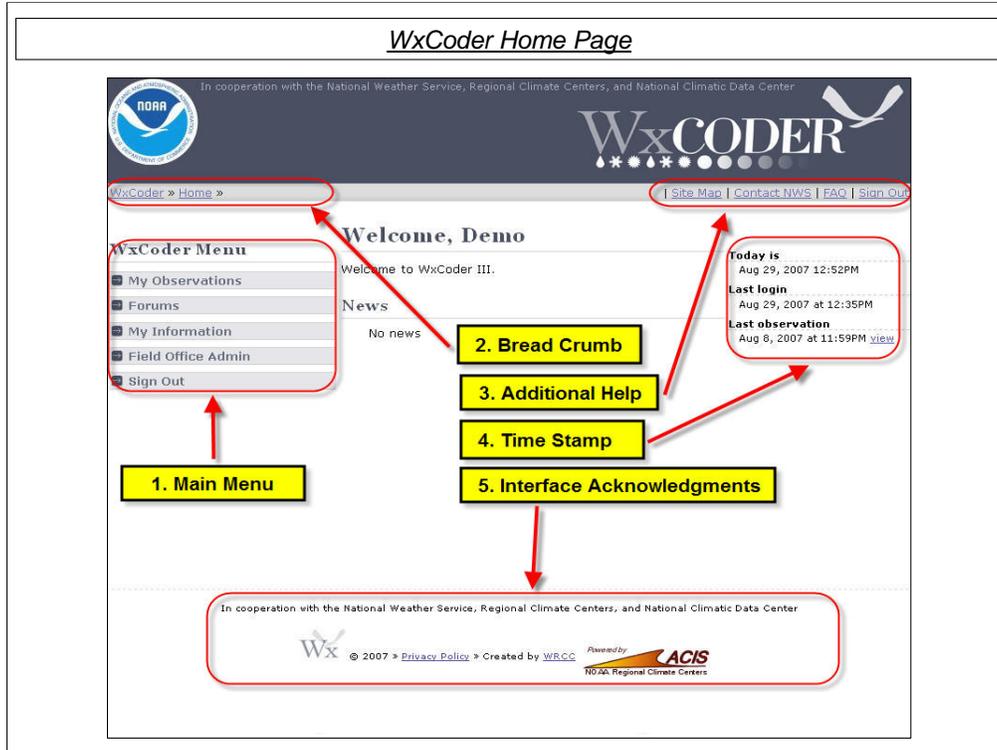
The internet-based WxCoder 3 interface is coupled with the IV-ROCS touchtone telephone COOP reporting system, through a common NWS database. This database manages the complex flow of information from climate data collectors to end users.



Logging In: WxCoder can be accessed at:

<http://acis.dri.edu/wxcoder/>

Once at the WxCoder Login Page you can enter your username and access code to enter the interface. These are provided by your local NWS contact. If you forget your access code, you can click on 'Having trouble?' in the login box and provide a username or e-mail that matches your profile at the local NWS office (WFO, etc.). An e-mail will then be sent to the address on file with a new access code.



WxCoder Active Session Home Page:

Once logged in to WxCoder, you will first encounter the active session home page. While logged in, your customized cooperative station information will be displayed and/or available. There are a number of key navigation features:

Main Menu: Provides access to observation and information pages.

Time Stamp: Three times are provided: i.) current login, ii.) last login, and iii.) last observation. These serve as a reminder of your frequency of interface use.

Bread Crumb: This provides a quick snapshot of where you are within the hierarchy of the WxCoder interface.

Additional Help: Additional help is available throughout the active session pages, including a Site Map, Contact NWS, Frequently Asked Questions (FAQ), and Sign Out. Question marks (?) also provide help for individual entry boxes and pull-down menus.

Interface Acknowledgments: Background information on interface collaboration between NOAA and its Regional Climate Center Program, along with reference to RCC Applied Climate Information System (ACIS), the data backbone of WxCoder, are provided here.

To sign out of an active session of WxCoder, click on 'Sign Out' in the upper right-hand corner of the page. You will be returned to the WxCoder home page with a message in red indicating that you have successfully signed out.

To contact you local WFO cooperative administrator, click on 'Contact NWS'. You will be provided with e-mail and/or other contact information for the local NWS office, determined by the County Warning Area (CWA) in which you take observations.

My Observations Page



In cooperation with the National Weather Service, Regional Climate Centers, and National Climatic Data Center



WxCoder » Home » My Observations
Wed, Aug 29, 2007 01:16PM PDT | [Site Map](#) | [Contact NWS](#) | [FAQ](#) | [Sign Out](#)

Grant's Test Site, NV

Enter new observation

- Daily form
- Monthly form

Download B-91

Browse previous observations

The menu to the left provides links to your observations.

Enter an observation or browse previous observations. To correct an observation, browse for it and then select **Add Correction**.

To download a B-91 form for any month, select **Download B-91** from the menu.

Change site

Grant's Test Site, NV (3)

There is more than one site assigned to your user identification. Select one of the sites using the pull-down menu and then click Go.

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As illustrated above - access to observations for the cooperative station 'Grant's Test Site, NV' is provided through the highlighted menu. Clicking on 'Enter new observation' or 'Daily form' will take you to the daily entry page, while 'Monthly form' will take you to the monthly entry page.

Daily Observation Entry Page (top-half)

The screenshot shows the WxCODER web interface for entering a daily observation. The page title is "Daily Observation Entry Page (top-half)". The interface includes a header with the NOAA logo and "WxCODER" branding. A "Current Time" label points to the top navigation bar showing "Thu, Aug 30, 2007 06:16AM EDT". The main content area is titled "Observation for Grant's Test Site". It features several sections: "Date and Time of Observation" (set to Aug 29, 2007 at Midnight), "Type of Observation" (set to daily), "Air Temperature" (with fields for Max, Min, and At observation), "Precipitation" (with fields for Precipitation, Snowfall, and Snow depth), and "Precipitation Time of Occurrence" (with a grid for AM and PM hours). A "Station Information" box on the right provides metadata like Site ID, Site Number, Time of observation, Lat/Lon, and Elevation. A "Key Observation Entry Areas" box on the right lists: 1. Temperature (WHOLE degrees Fahrenheit), 2. Precipitation (HUNDREDTHS of an Inch), 3. Snowfall (TENTHS of an Inch), and 4. Snow Depth (WHOLE Inches). A "5. Precipitation Time" box points to the "Precipitation Time of Occurrence" grid. A "What is this?" link is also visible. The interface is annotated with red arrows and boxes: "On-Screen Help" boxes provide detailed instructions for precipitation time of occurrence and temperature units; "On-Screen Help (Active)" points to the "What is this?" link; "Station Information" and "Key Observation Entry Areas" are highlighted in yellow and green respectively.

The 'Daily Observation Entry Page' (top-half shown here) is where you will most likely go to enter your observation. The following key features will assist you in entering your observation:

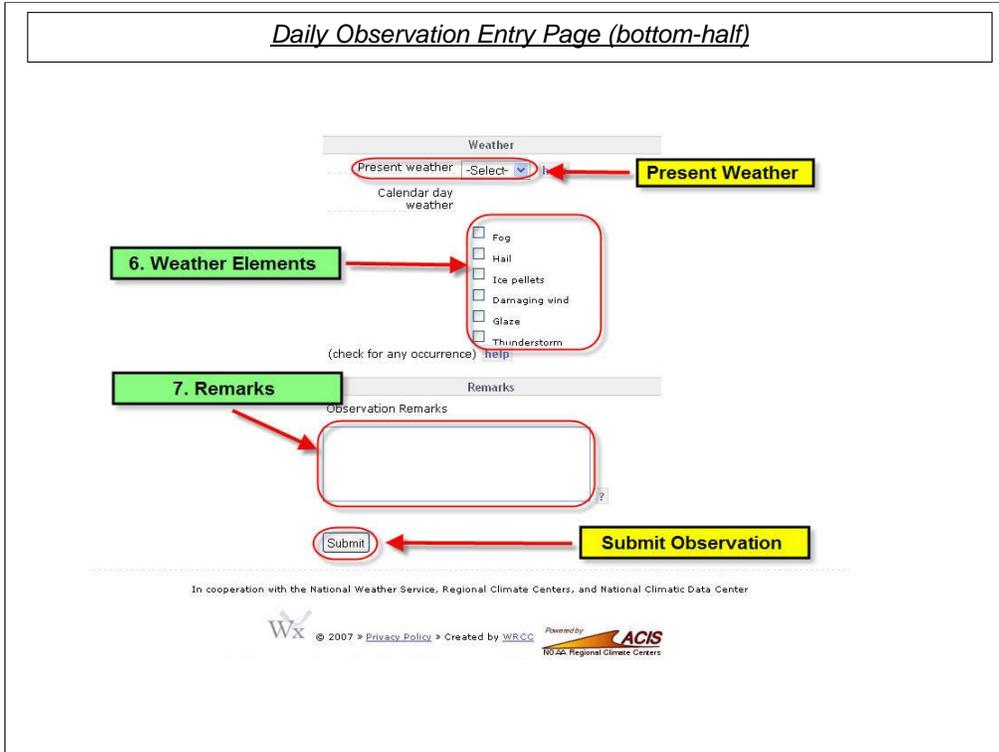
Station Information: Provides key metadata (data about the station), including ID, official time of observation, location, elevation, and supervising local NWS office.

Date and Time of Observation: Defaults with the previous day and official observation time. Contrast with the *Current Time*, which will be some period between the observation and entry into the interface (this period should be minimized as much as possible).

Type of Observation: Most observers will provide information for the 24-hour period preceding the official time of observation. However, additional reporting is permissible using this pull-down menu – mainly to provide supplementary information in cooperation with your supervising local NWS office.

On-Screen Help: Help is available throughout the interface wherever entries can be made. These are indicated by a question mark (?), 'What is this?', or 'help'.

Appendix A provides a complete listing of all on-line help language.



Bottom-half of Figure 5 – see previous slide.

WxCoder Observation Categories on B-91 Form:

The seven numbered observation entry areas as shown below correspond to entry areas on the NWS B-91 form, as shown in the previous slide.

1. Temperature
2. Precipitation
3. Snowfall
4. Snow Depth
5. Precipitation Time
6. Weather Elements
7. Remarks

Observation Entry Areas: The seven numbered observation entry areas in 'Daily Observation Entry Page' correspond to entry areas on the NWS B-91 form, as shown above.

Temperature: Separate entry boxes for maximum, minimum, and at-observation temperatures. All must be entered in whole degrees Fahrenheit.

Precipitation: For the measurement period (usually the last 24-hour period), enter the total accumulation of rain and/or melted hail, ice pellets, glaze or snow in inches and hundredths, including the decimal point. Trace observations should be recorded with a capital 'T'.

Snowfall: For the measurement period, enter the total of newly fallen snow in inches and tenths, including the decimal point. Trace observations should be recorded with a capital 'T'.

Snow Depth: For the measurement period, enter the average depth of all snow and other frozen, accumulated precipitation on the ground at the time of observation in the vicinity of the station in whole inches. Trace observations should be recorded with a capital 'T' (for an average depth greater than zero but less than 0.5").

Precipitation Time: Indicate the hourly periods when precipitation was observed or known likely occurred (estimated but uncertain) over the course of the CALENDAR day – NOT THE PREVIOUS 24-HOUR PERIOD UNLESS YOU ARE A MIDNIGHT OBSERVER. The number in each block indicates the start of the hour (e.g., 6 AM represents the period 6:00 am - 6:59 am). First, select the appropriate radio button above as to whether the precipitation was observed or estimated. Next, click the block for each hour corresponding to the precipitation occurrence. Hours can also be added by selecting a start and end time from the dropdown lists, and pressing the add button.

Weather Elements: Occurrence within the measurement period of the following should be noted by clicking on the square check box to the left of the wording: Fog, Hail, Ice pellets, Damaging wind, glaze, and thunderstorm. A visible check indicates selection.

Remarks: This space is available for you to enter any additional notes about phenomena that are 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), or phenological (e.g., killing frost, status of leaves, blooms, pollens, etc.) conditions of note, river conditions, details about weather entries (e.g., hail size), or other observations of the natural environment.

Present Weather: When your observation is completely entered, click the 'Submit' button. Your complete entry will be evaluated for its quality, as outlined in the Quality Control section. Errors or omissions requiring your feedback will be instantly provided.

Submit: When your observation is completely entered, click the 'Submit' button. Your complete entry will be evaluated for its quality, as outlined in the Quality Control section. Errors or omissions requiring your feedback will be instantly provided.

Monthly Observation Page

The screenshot shows the WxCoder interface for 'Grant's Test Site, NV (GMKN2)'. At the top, there are navigation links and a 'Download this B-91 as pdf' button. Below is a data entry grid with columns for Temperature (24 HRS, AT OBS), Precipitation (None, Observed, Estimated), and Weather. The grid shows data for days 1 through 25. Annotations include:

- Active Day - Unlocked for Edit:** Points to the 'AT OBS' column for day 8.
- Observed Precipitation from 8 am to 12 noon local standard time:** Points to the 'Observed' radio button and the 'Time of occurrence' field for day 8.
- Accumulated Precipitation (Rare):** Points to the 'None' radio button for day 8.
- Click to Download B-91 With Data:** Points to the 'Download this B-91 as pdf' button.
- More Data Below (not shown):** Points to the bottom of the grid.

At the bottom of the grid, there is a summary table for 'Grant's Test Site' for August 2007, including fields for 'RECORD OF RIVER AND CLIMATOLOGICAL OBSERVATIONS'.

This slide shows the top portion of the 'Monthly Observation Page.' This page allows you to view your data from a monthly viewpoint while editing daily values. The form can be converted into a filled B-91 at any time.

Confirm Observation Page.

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WxCODER

WxCoder » Home » My Observations » Confirm observation Thu, Aug 30, 2007 11:10AM PDT Site Map | Contact NWS | EEO | Sign Out

Carefully review your observation. If everything looks good, click the **Confirm** button below. Otherwise, click **Make corrections** to go back and make changes.

On-Screen Help
Click on a question mark on this page to display helpful information.

Accumulation
(multiple periods for precipitation total; rare)

Confirm observation

Observation Time	August 29, 2007 at 11:59PM
Max temperature	92 degrees F
Min temperature	64 degrees F
At observation	73 degrees F
Precipitation	0.48 inch
Accumulation	No
Snowfall	0.0 inch
Snow depth	0 inch
Precipitation Time of Occurrence	Observed: 3 pm - 4 pm
Present weather	00
Calendar day weather	Hail, Damaging wind, Thunderstorm
Remark	Penny-sized hail from 3:15-3:25 pm

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Once the observation has been submitted from either the daily or monthly observation entry page, a confirmation is required. This confirmation ensures that typographical errors are corrected. You should take care to review all elements and make appropriate corrections before submission. Below is a sample observation for confirmation.

My Observation Page (with Confirmation)

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WxCODER

WxCoder » Home » My Observations Thu, Aug 30, 2007 11:29AM PDT | [Site Map](#) | [Contact NWS](#) | [FAQ](#) | [Sign Out](#)

Grant's Test Site, NV

- Enter new observation
 - Daily form
 - Monthly form
- Download B-91
- Browse previous observations

Your observation for **Aug 29, 2007** has been saved. [View it](#)
OR
[Enter previous day](#) | [Enter next day](#)

Confirmation of Observation Box

Observations

The menu to the left provides links to your observation

Enter an observation or browse previous observations. To correct an observation, browse for it and then select **Add Correction**.

To download a B-91 form for any month, select **Download B-91** from the menu.

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Once the confirmation is made by clicking the 'Confirm' button, you will be returned to the 'My Observations' page with a box (as shown below) that allows you to quickly view the observation or enter the next or previous day's observation.



Moving Forward!

29 January 2008: Transitioned Observers from WxC2 to WxC3.

As most of you know, the idea of moving to a paperless transmission of COOP data environment was proposed about a year ago. Draft requirements were established and sent for coordination, and a solution was proposed for moving the operational capability into operations at partner facilities (NCDC and RCCs). Along the way, there have been some communications lapses and other impediments to moving the total paperless environment forward. I am happy that we can all be here today to move this process forward. I am proud of what we have been able to do on the web side and look forward to more progress on the telephone side.

Benefits of WxCODER 3 ???

WxCoder 3 offers a number of improvements for both the observer and also the NWS, RCC, and NCDC offices who work to collect, quality control, and redistribute the COOP data.

Improvements of the WxCoder3 include:

- A more user-friendly web interface (including new help menus);
- Monthly forms that automatically sum and average temperature, precipitation and snowfall observations;
- Additional space for the observer remarks;
- Immediate data quality assurance through routine functions. WxCoder 3 also provides an advanced WFO administrative interface. NWS supervising offices can customize observer inputs and ensure easy & timely two-way communication with observers.

Continued...

Benefits of



WxCoder 3 provides enhanced front-end data quality control features, which significantly reduce data errors from manual entry of daily data, keypunch errors, and incorrect administrative information.

Examples of these quality control checks include (but are not limited to):

- Temperature consistency checks (e.g., maximum temperature cannot be less than minimum temperature for the same observing period, *etc.*);
- Precipitation consistency checks (e.g., precipitation values cannot be negative);
- Winter precipitation consistency checks (e.g., if snowfall exceeds three inches, snow depth must increase, *etc.*);
- Gross limits checks (values cannot exceed fixed numbers and site records).