

SnoTel Data Retrieval Plug-in

December 2009

Introduction

The SnoTel data retrieval plug-in is an optional capability that will retrieve daily and hourly data from SnoTel stations from the NRCS National Water and Climate Center web site and store it into an HEC-DSS file. The plug-in can be used with HEC-DSSVue Version 2.0 (not version 1.2 or earlier). The NRCS main SNOTEL web address is: <http://www.wcc.nrcs.usda.gov/snow>



An HEC-DSSVue plug-in is a set of Java software that is compiled and put into a Java ".jar" file. By simply placing this file into the HEC-DSSVue Plugins directory, it is automatically loaded and accessible from the HEC-DSSVue program. The purpose of a plug-in is similar to the jython scripting capability that is available in HEC-DSSVue. However, since plug-ins are written in the Java language, which is used by HEC-DSSVue, there are extended capabilities and controls available. The plug-in code can access the HEC-DSSVue API (Application Program Interface) directly. Typical uses for plug-ins are: complex mathematical operations; specialized formatting of data for entry into another application (such as a program that uses a "card format"); and, retrieval of data from a web site.

Usage

To activate the SnoTel plug-in, the SnoTel.jar file is downloaded and placed in directory “Program Files\HEC\HEC-DSSVue\Plugins”, if it has not been installed already. To uninstall a plug-in, simply remove it from the Plugins directory. When you run HEC-DSSVue, it detects plug-ins in the Plugins directory and automatically loads them.

To use the SnoTel plug-in you must be connected to the internet. Run HEC-DSSVue, open the HEC-DSS file where you want to store the retrieved data. Run the plug-in by selecting the **Data Entry** menu, then **Import** and **Snotel**. This will open the Snotel Download plug-in interface with an empty station identifier table. From here, you can either open a previously saved table, manually enter the station information for the stations that you want, or automatically populate the table with a list of stations available on a state by state basis or the complete list of stations. An example of the Snotel plug-in screen is given in Figure 1.

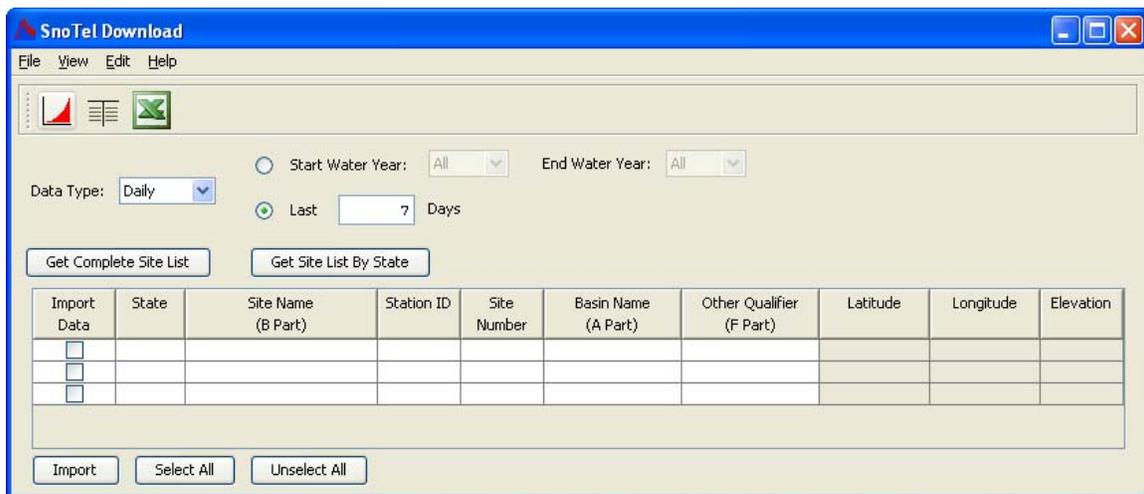


Figure 1 Snotel Plug-in Screen

Station ID Table

To open a previously saved table, select the **File** menu and then **Open**. Browse to the directory and file that you want to access and then press the **Open** button. Optionally, you can select a file from the most recently used file list at the bottom of the **File** menu. To save a table, select the **File** menu and then **Save**. Browse to the directory where you want to save your table and then enter the file name and press the **Save** button.

To manually enter station information, select State cell on a blank row, enter 2 character state ID (postal code), the station ID and site number and then fill in the location name, basin or river name and version in the subsequent columns or accept the defaults provided. Note: At a minimum, you must provide the state ID, station ID and site number. Snotel uses these items to retrieve data. If you need to add additional rows,

select the **Edit** menu and then **Insert Rows**. Fill in the identifiers for any remaining stations that you want. Once you have completed your table, save it using **Save** from the **File** menu.

To automatically populate the station table with a list of stations from the NRCS web site, select **Get Complete Site List**, or **Get Site List by State** from the **File** menu or from the button on the main screen. The Complete Site List will show all the SnoTel sites for all states. If you choose to get sites by state, select the state from the dropdown menu that will appear in the dialog, as shown in Figure 2.



Figure 2 - State Selection

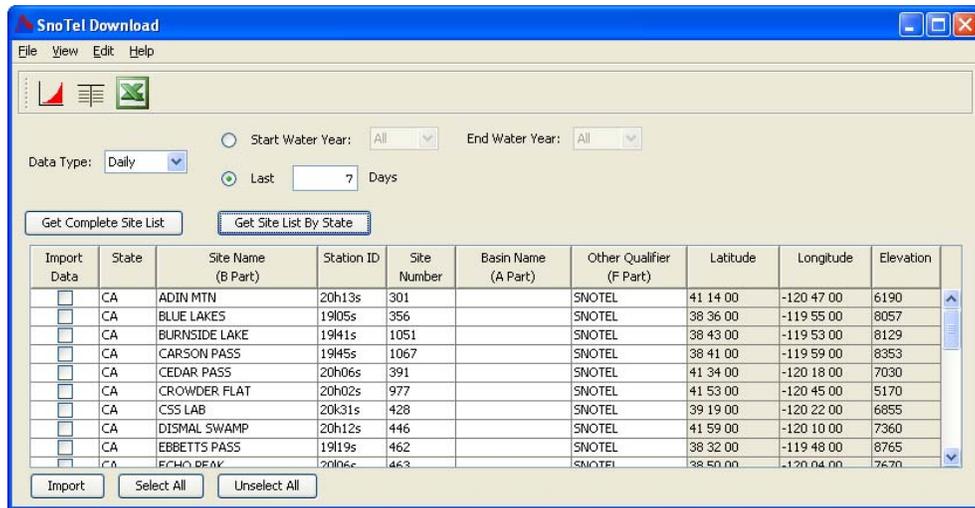


Figure 3 - Site List for California

The latitude, longitude and elevation are stored in the HEC-DSS records automatically. You can sort the station table by pressing on the column header of the column that you want to sort by. A second press of the column header will perform an inverse sort.

You may find the list of stations easier to use if you delete those stations that you are not interested in. To do this, highlight the rows in the table that you want to delete and then select **Delete** from the **Edit** menu. You can save your table by selecting **Save** from the **File** menu.

Retrieving Data

You can retrieve either historic daily data or recent daily or hourly data. Historic daily data is retrieved by individual water year, back to water year 1979. Note that data for the current water year will contain current data; i.e., you'll get today's data if you select the current water year. Recent data only goes back to the start of the current water year. You cannot retrieve historical hourly data.

To retrieve data from the NRCS SnoTel web site and import into HEC-DSS, select the data type you want (either Daily or Hourly) from the drop down selector near the top panel of the screen. If you want historical daily data, you can select the Start Water Year radio button and then the water year range that you want or "All". If you want recent daily or hourly data, select the "Last" radio button and then the number of days back that you want, up to the start of the current water year.

After the data type and time span have been set, select the stations from the table that you want data for by checking the box in the **Import Data** column for those stations. If you want to retrieve data for all stations in your table, press the **Select All** button. The data retrieval process will begin when you press the **Import** button. This operation will take some time, depending on your connection speed to the internet and how much data you have requested. A **Retrieve Progress** dialog box will display the progress of the process. After data has been retrieved, the main catalog screen in HEC-DSSVue will be automatically updated.

The SnoTel plug-in stores all the data that is given by the NRCS web site. If you are not interested in specific data sets, you may delete them after they have been stored.

If you do not think the data is correct or there are issues, please check the SnoTel web page for the station that you are retrieving data for. This plug-in only stores what it is given – no changes to data are made. If you have a failed connection, be sure that you can access the web site and check that you do not have a fire wall or proxy problems blocking you. The main web site address is:

<http://www.wcc.nrcs.usda.gov/snow>

Plotting, Tabulating and Displaying Data in Microsoft Excel

Data can be directly plotted, tabulated or sent to Microsoft Excel from the plug-in by selecting the desired data sets and then pressing the appropriate tool bar button. You do not need to import the data first; it will be automatically imported and stored in the HEC-DSS file for you. To send the data to Microsoft Excel, you must have installed the Excel plug-in, available from the HEC-DSSVue plug-in web page.