



# Soil Survey Geographic Database (SSURGO) Bulk Downloader for QGIS

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## 1. Overview

The following sections detail the instructions for installing the SSURGO Bulk Downloader into the QGIS Processing Toolbox and for using the SSURGO Bulk Downloader tool. The tool downloads the same data as [Web Soil Survey \(WSS\)](#). However, the SSURGO Bulk Downloader can download many datasets at once, while WSS cannot. Another difference is that WSS downloads ZIP files, while the SSURGO Bulk Downloader saves unzipped datasets to the selected output directory.

This guide assumes the following:

- You have QGIS 3.0 or greater installed on your computer.<sup>1</sup>
- Your operating system is Microsoft Windows 10 or greater.<sup>2</sup>

## 2. SSURGO Bulk Downloader Installation

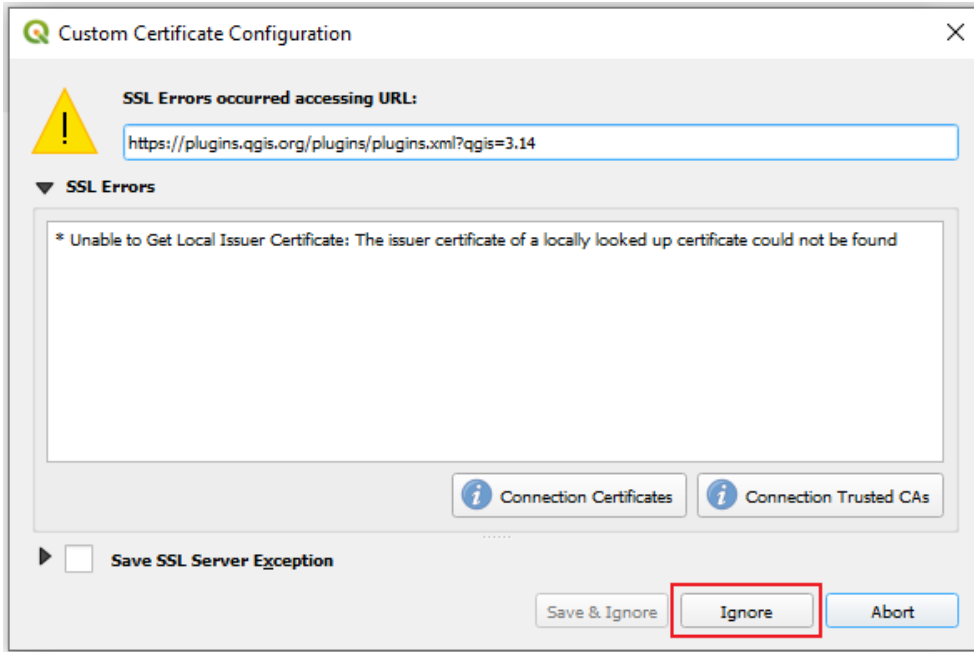
To install the SSURGO Bulk Downloader, complete the following steps:

1. Download SSURGO Bulk Downloader QGIS.zip from the [SSURGO Portal webpage](#) to the directory of your choice. You don't need to unzip the file.
2. Open **QGIS**, click the **Plugins** tab, and select **Manage and Install Plugins**.
3. Some users may encounter the following **SSL Errors** window when the Plugin Manager loads. It is okay to click the **Ignore** button since the plugin installation will be from a ZIP file rather than from a web connection.

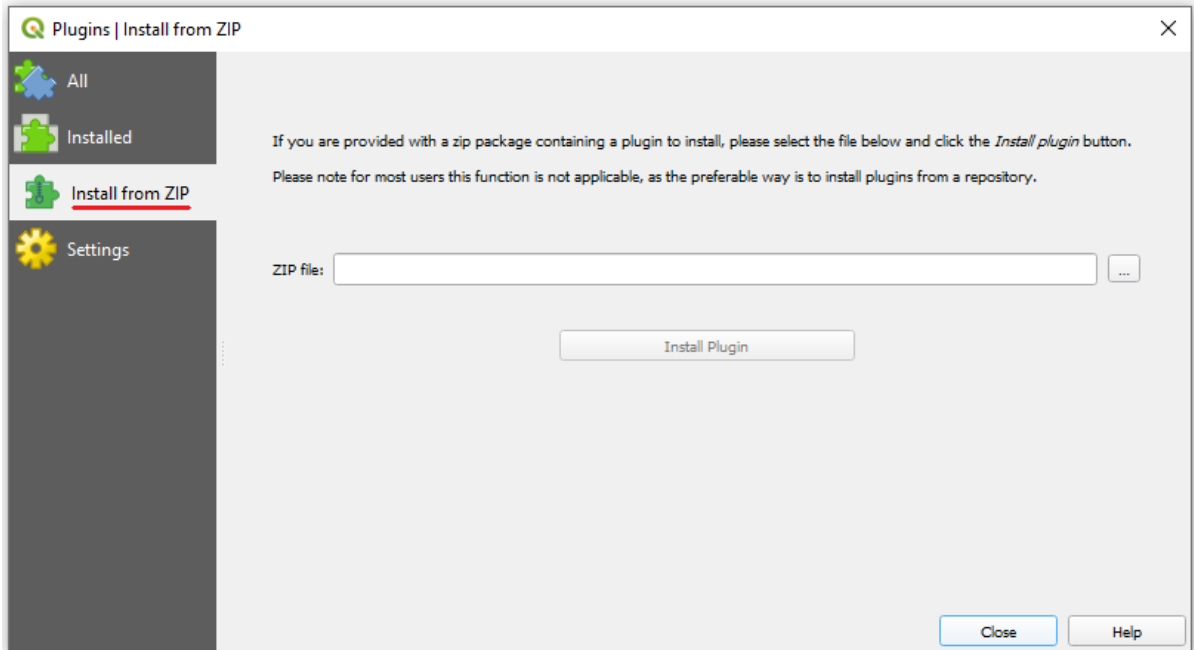
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<sup>1</sup> The developers tested SSURGO Bulk Downloader on 3.22 and 3.30.

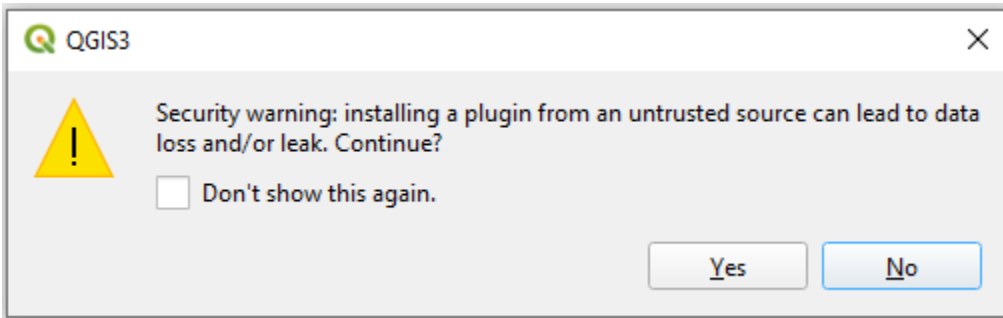
<sup>2</sup> The developers tested SSURGO Bulk Downloader on Windows 10 and 11.



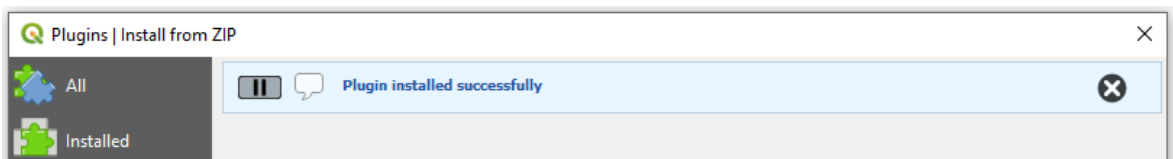
- In the plugin manager, select **Install from ZIP**.



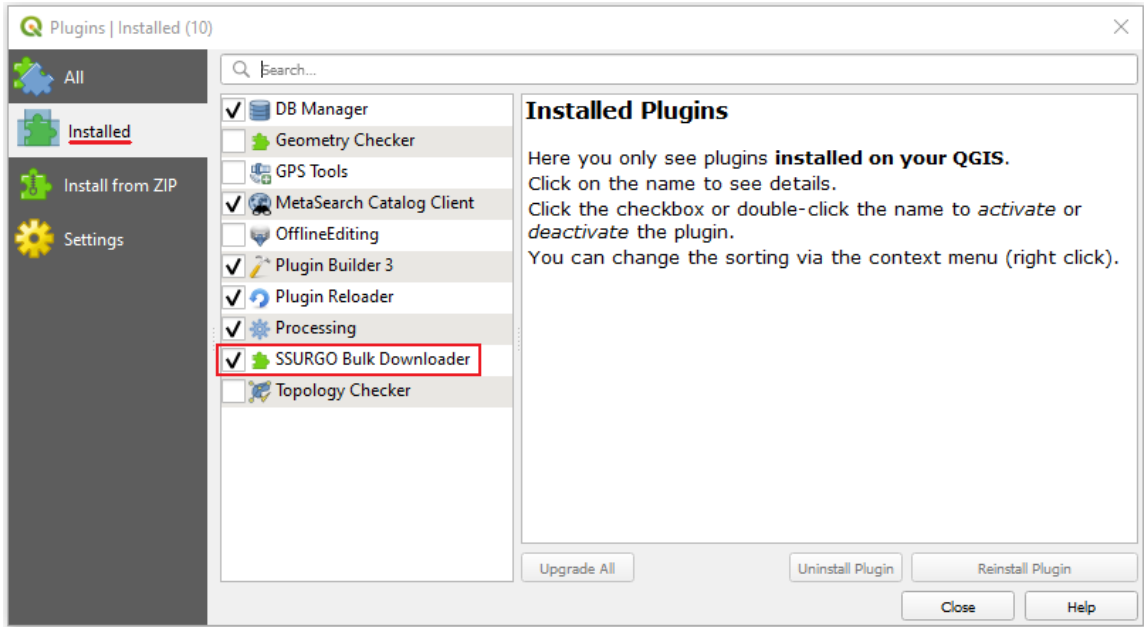
- Navigate to where you downloaded SSURGO Bulk Downloader QGIS.zip and then click **Install Plugin**.
- A security warning will pop up. Click **Yes** to continue.



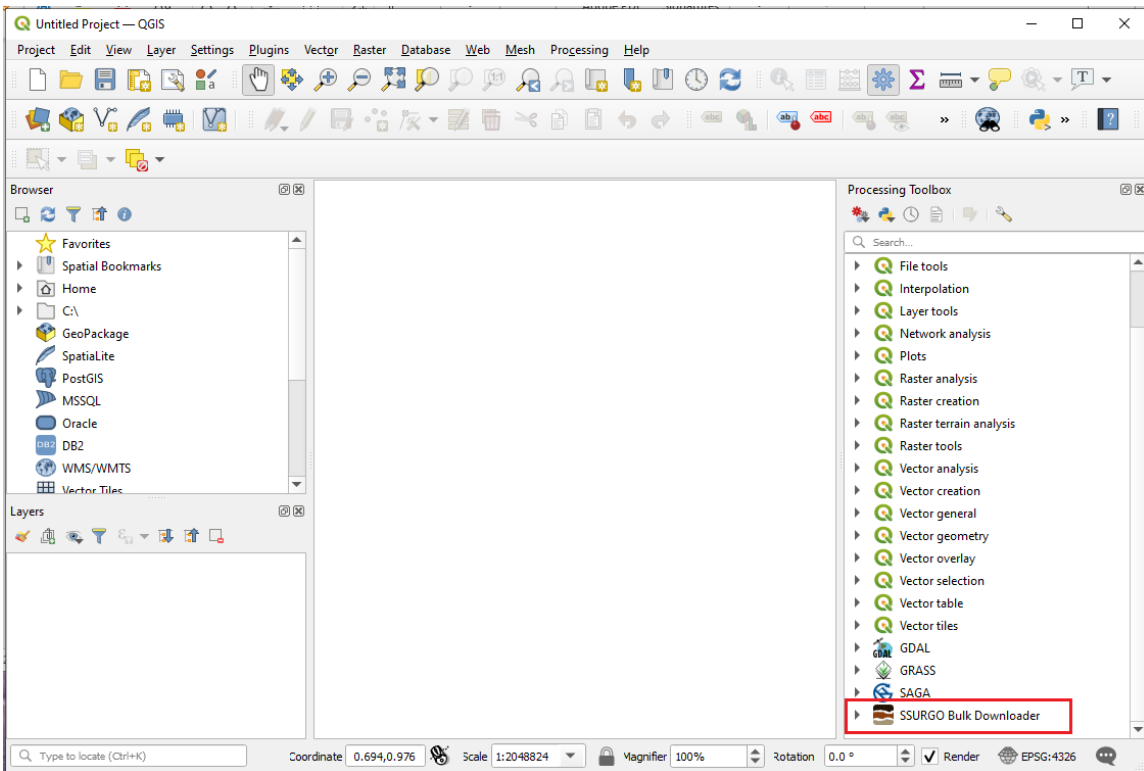
- The installation happens quickly, after which you should see the following message at the top of the plugin manager.



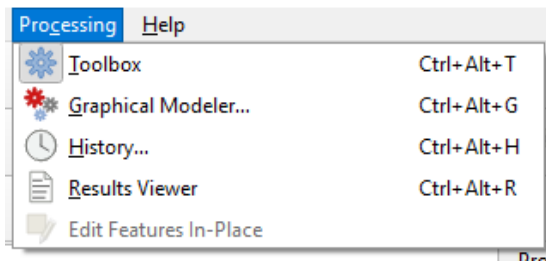
- The **SSURGO Bulk Downloader** should now appear in the **Installed** section of the plugin manager. The plugin manager can now be closed.



- Additionally, the **SSURGO Bulk Downloader** should now appear in the **Processing Toolbox** in the main QGIS application.



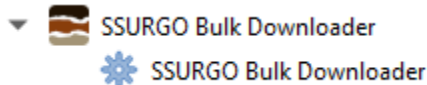
- If the Processing Toolbox is not open, you can open it by clicking on the **Processing** tab and selecting **Toolbox**.



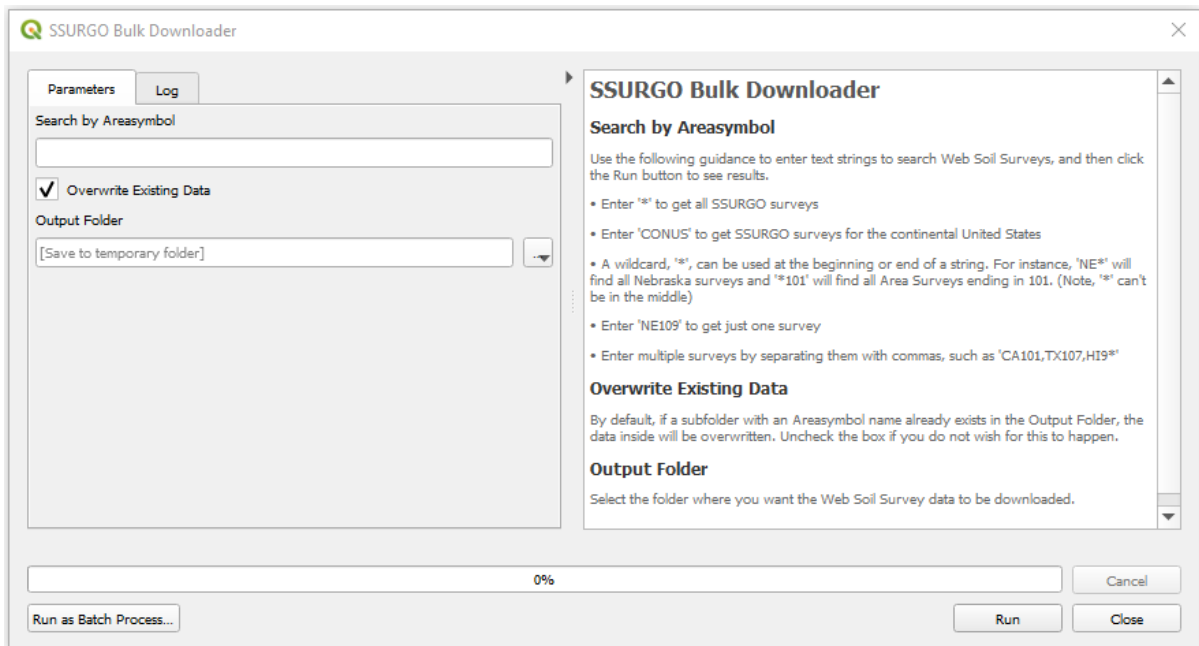
### 3. Using SSURGO Bulk Downloader

To begin using the SSURGO Bulk Downloader, complete the following steps:

- Double click to launch the **SSURGO Bulk Downloader** in the Processing Toolbox.



- Fill in the **Parameters** according to the guidance provided to the right. On this screen, you are searching for soil survey areas by area symbols and setting the location where you will store the SSURGO data. After you fill out the parameters and click **Run**, a new window will appear with a list of candidate soil survey areas you can select for download. These are the soil survey areas returned by your search. You will then select from this list and begin the download. Additional notes are below.



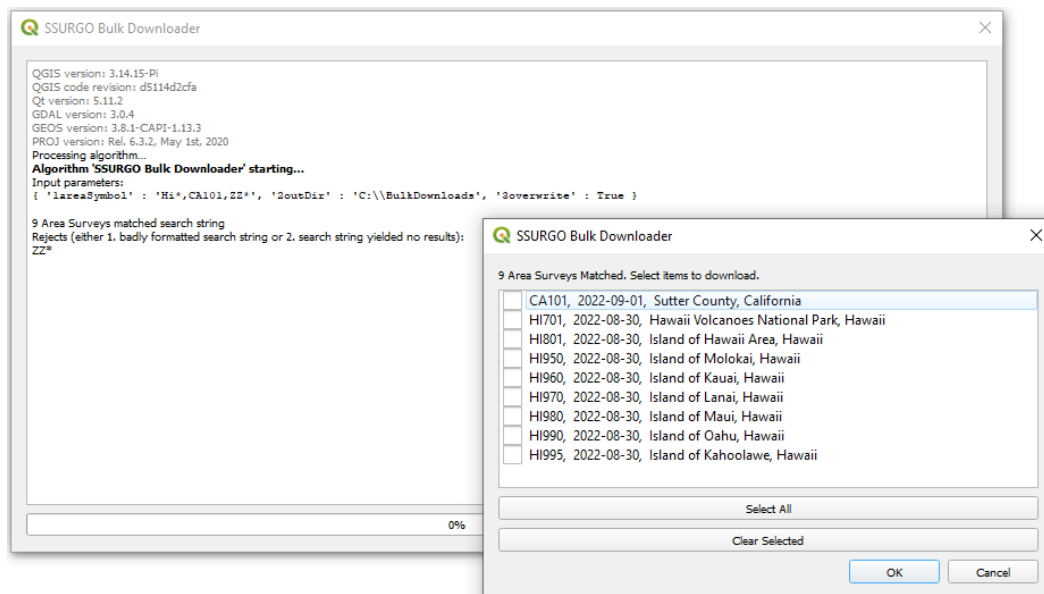
a. **Search by Areasymbol.**

- With one exception, the format for Areasymbols is two letters for the U.S. state or territory followed by a three-digit number (i.e., HI701).
- The quotation marks used in the guide are not necessary. Single and double quotes are removed before the search string is parsed.
- This field is not case sensitive, so, for example, hi701, Hi701, and HI701 all work.
- If you include special characters other than the wildcard (“\*”), the tool prompts the user to remove them before the tool can run successfully.
- If your search string doesn’t yield any Areasymbol matches (i.e., ‘ZZ\*’), then, when you click **Run**, a dialog box will pop up informing you, “No Area Survey Matches”. After clicking **OK**, you can modify the search string.

b. **Overwrite Existing Data.** If this setting remains checked, the tool only overwrites the files that are standard for an Areasymbol. If you changed any names or added any items, the tool will not affect them.

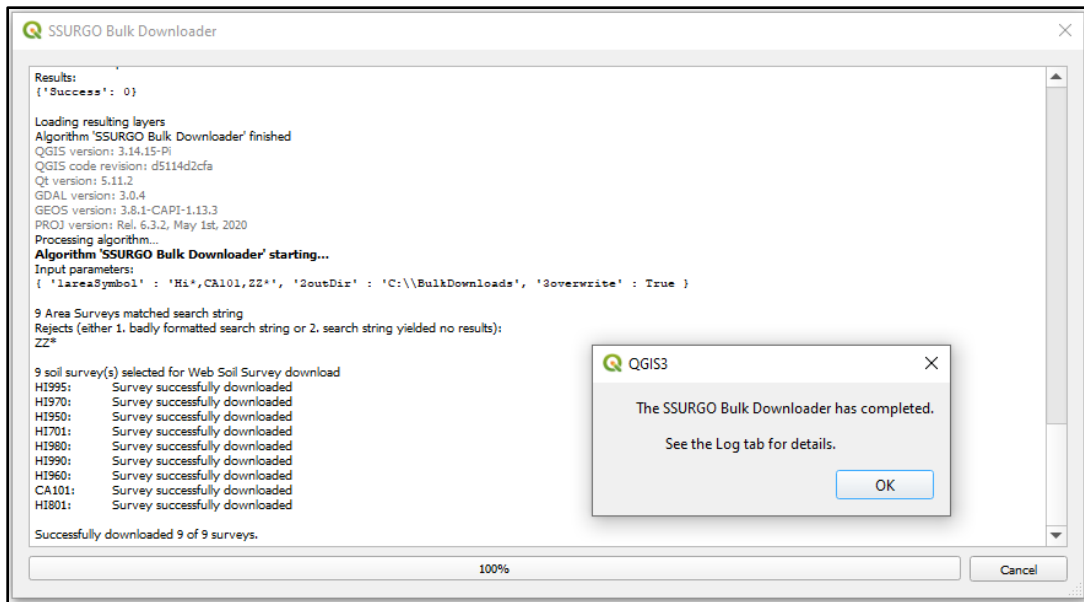
c. **Output Folder.** Data downloaded to the default (Save to temporary folder) location ends up buried in C:\Users\[USER]\AppData\Local\Temp and will be deleted once QGIS is closed, so it is highly advisable to select your own location.

3. With “Hi\*, CA101, ZZ\*” as an example search string and **C:\BulkDownloads** as the output folder, clicking **Run** results in one dialog box for the tool’s log messages and another for the Areasymbols that matched the terms in the search string. As explained above, “ZZ\*” doesn’t yield any matches. In this case there are other matching results, so a log entry prints a list of any search terms that did not yield matches.





- In the Areasymbols results box, select at least one dataset to download and click **OK**. If nothing is selected, a popup box will state, “No items were selected,” and the tool will return to its initial state. **Cancel** behaves the same except no popup box will appear.
- The tool will now perform the downloading, as indicated by log messages as well as a status bar at the bottom of the dialog box. *Note that some large Areasymbols can take many minutes to download, and downloading all Areasymbols can take several hours.* Once all datasets have been downloaded, a popup box states that the tool has completed. Clicking **OK** will return the tool to its initial state. You can now see the logs that were in the popup window in the tool’s **Log** tab. Also, the downloaded datasets will be in the selected output folder.



- In a second scenario, the developers attempted to download data to a full drive to illustrate how the tool handles download failures. Below is a screenshot of the final log messages. If the tool experiences any download failures, it generates a comma-separated list of those Areasymbols. A user can then cut and paste that list into another session of the tool rather than having to try again from the beginning.

