USDA NATURAL RESOURCES CONSERVATION SERVICE
SOIL SCIENCE DIVISION

GITHUB TECHNOTE

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A guide to establishing a desktop connection to specific repositories within the GitHub ncss-tech organization using the version control software Tortoise SVN to employ geospatial tools

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Overview

GitHub is an open source web-based repository that is used to track changes in computer files such as scripts and applications and allows coordination of work on those files among multiple contributors. GitHub creates a collaborative environment where numerous developers can contribute, modify and synchronize changes to files such as scripts and various applications in one centralized location while users have easy and distinct access to the latest version of these files.

Government agencies at the national, state and local level have been using GitHub to share and collaborate on code, data and policy for many years now. USDA agencies such as FSA, ARS and ERS are utilizing GitHub Organizations to manage collaborative projects in repositories, a digital directory where you can access files related to specific projects.

Recently members of the National Cooperative Soil Survey (NCSS) created a GitHub Organization called ncss-tech where over 30 active members have contributed to a collection of repositories containing geospatial processing scripts and reports written in R, Python and HTML.

GitHub not only provides a centralized location to host and publish scripts and reports, which may benefit both internal and external users, but will allow NRCS Soil Science Division to streamline a workflow for accessing the latest version of geospatial processing and analytical tools produced and maintained by NRCS.

Interacting with GitHub

There are different ways of interacting with content stored on GitHub. Some of these include the GitHub.com web interface and various version control desktop software. GitHub offers a native desktop application called GitHub Desktop that seamlessly interacts with content posted to GitHub however, it is currently not certified for use on USDA Common Computing Environment (CCE) computers.

Tortoise SVN is the only Subversion software that is currently CCE certified. This document will outline instructions on accessing GitHub repositories using Tortoise SVN.

Required software: Tortoise SVN

If you do not have this software loaded on your computer, please request the most current version through CTS ITSM Self Service (through your local IT Specialist).

WHAT IS TORTOISESVN?

TortoiseSVN is a free open-source Windows client that manages files and directories that are stored in a central repository*. The repository is much like a file server, except that it remembers every change ever made to your files and directories. This allows you to recover older versions of your files and examine the history of how and when your data changed, and who changed it.*

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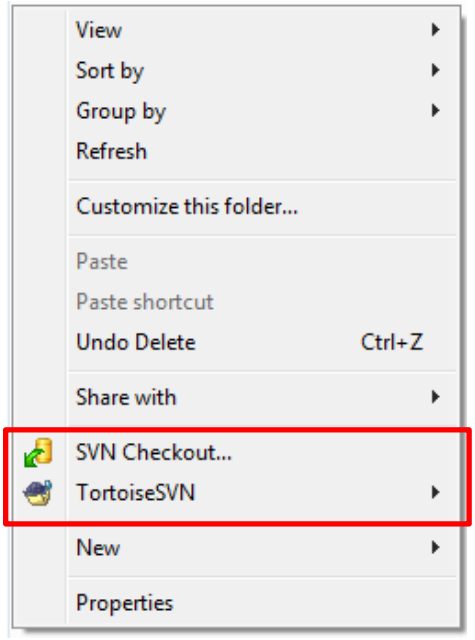
Setup

Once Tortoise SVN has been successfully installed, a new Tortoise SVN menu item will be introduced to your Windows Context menu when you right-click within Windows Explorer.



Before a connection can be established to a GitHub repository it is best to designate a local directory that will contain the sub-directories containing the files from individual GitHub repositories.

This directory can be created on a local hard drive, external hard drive or on a network drive. An ideal location would be an existing directory where you typically house custom scripts and tools.

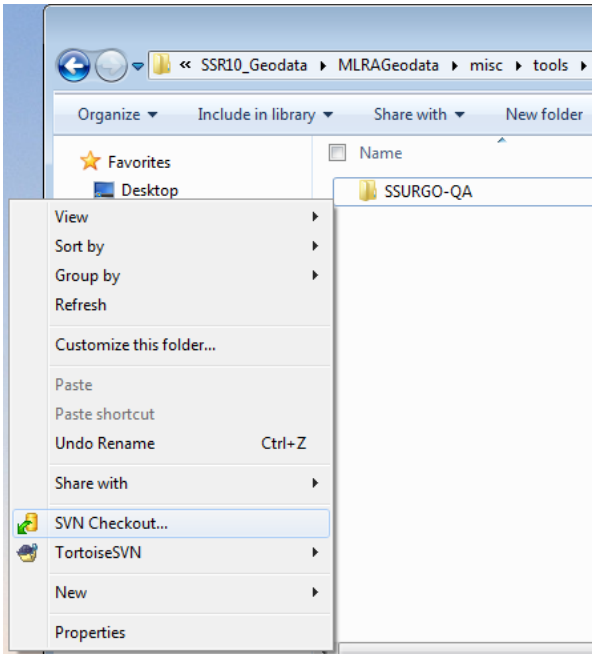
**For Region 10 users, please use the MLRA Geodata folder structure to keep consistency. For the majority this path is similar to MLRAGeodata\misc\tools.*

Once a folder has been designated, establishing connections to individual GitHub repositories is a matter of repetitive steps with a couple of unique settings per connection. The first connection setup in this guide will provide an illustrative procedure to establishing a connection. All connections thereafter will only differ in the **GitHub URL** and the **name of the local folder**.

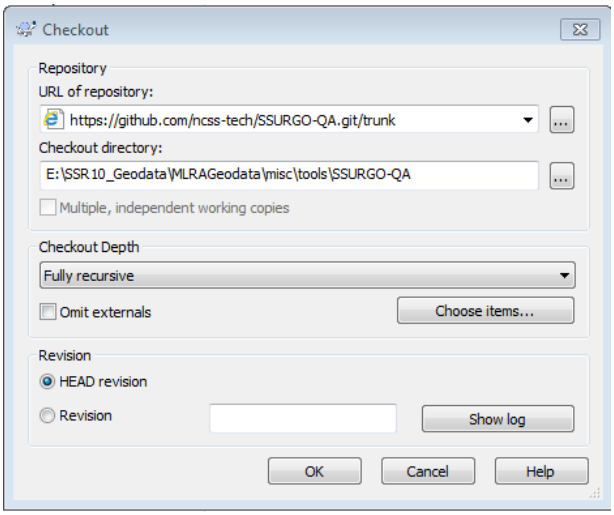
Establishing GitHub Connections

- SSURGO-QA TOOLS: *the official version of the quality assurance tools used to certify SSURGO data*

1. Open Windows Explorer and navigate to your designated GitHub folder.
2. Create a new folder called *SSURGO-QA*.
3. Right-click on the *SSURGO-QA* folder and choose ***SVN Checkout***.



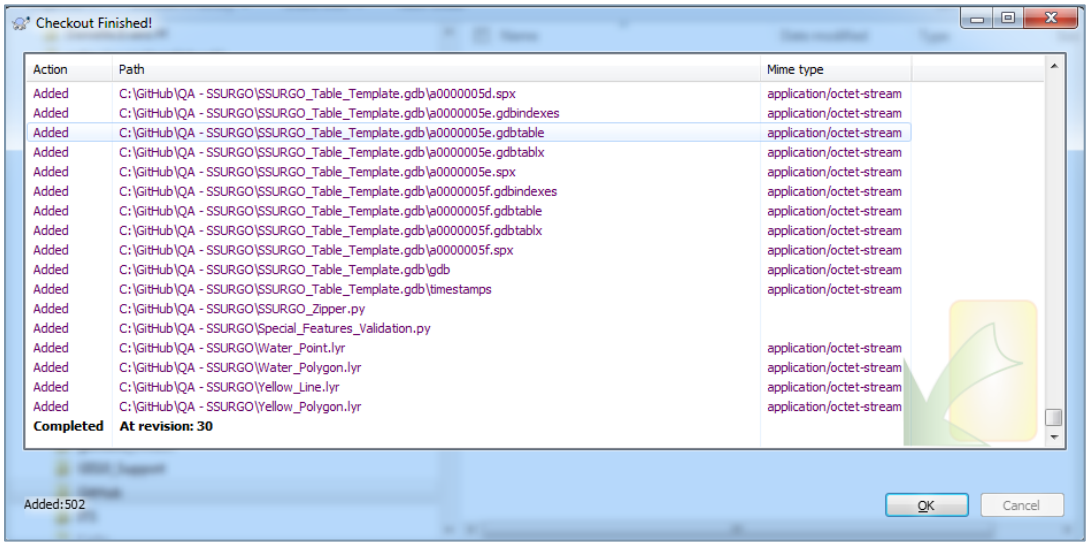
4. Copy and paste the following URL into the URL of repository:
   https://github.com/ncss-tech/SSURGO-QA.git/trunk



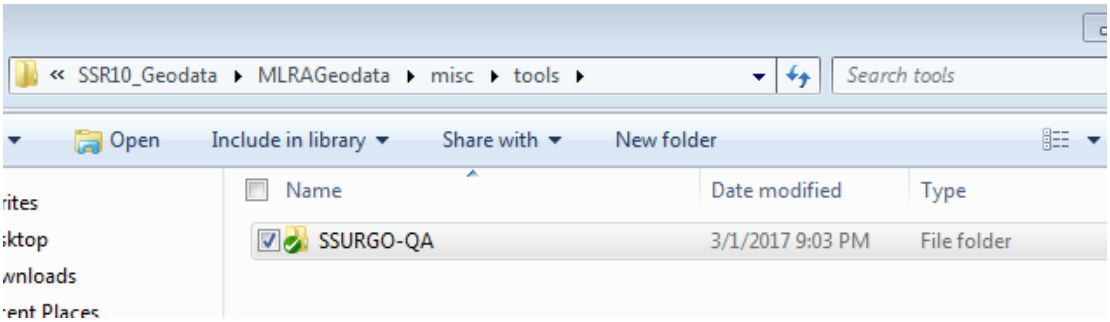
The Checkout directory will automatically be populated with the path to where you right-clicked for the SVN Checkout. Leave everything else as it defaulted.

Click OK.

5. A separate window will be invoked showing the files that have been copied from the repository to the *SSURGO-QA* folder.



Click OK when completed. You may have to refresh your Windows Explorer but you will then see a green checkmark on the lower left part of the directory indicating that it is associated with a GitHub repository and that contents of this folder are current.



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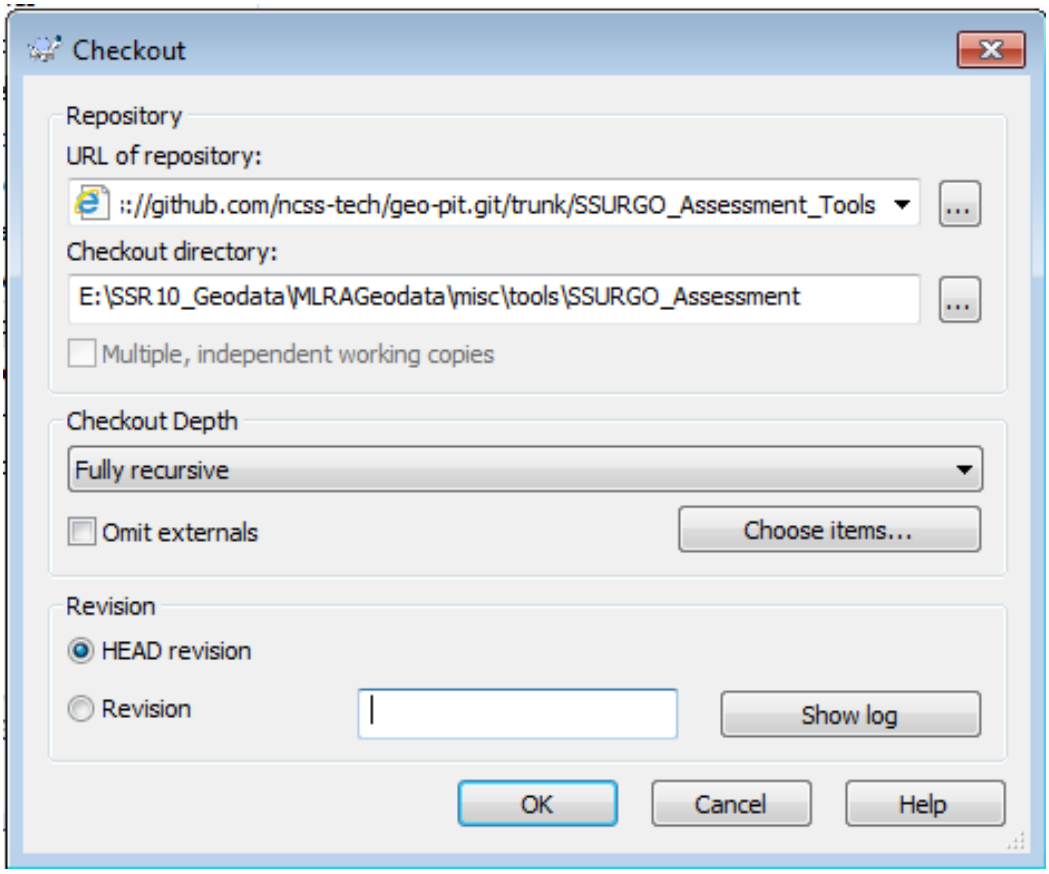
- SSURGO ASSESSMENT TOOLS*: a collection of tools to evaluate data for MLRA and SDJR projects*

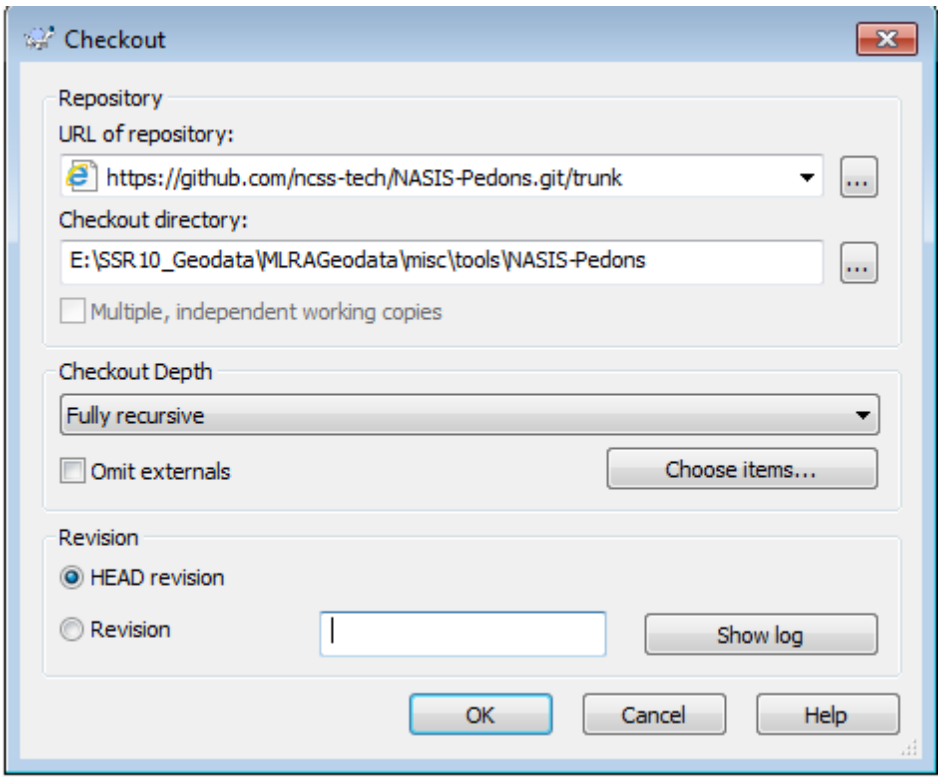
1. Open Windows Explorer and navigate to your designated GitHub folder.
2. Create a new folder called *SSURGO_Assessment*.
3. Right-click on the *SSURGO_Assessment* folder and choose ***SVN Checkout***.
4. Copy and paste the following URL into the URL of repository:
   https://github.com/ncss-tech/geo-pit.git/trunk/SSURGO_Assessment_Tools



5. A separate window will be displayed showing the files that have been copied from the repository to the *SSURGO_Assessment* folder.

- NASIS-PEDONS TOOL: *This repository contains ArcGIS Tools that query soil pedons from the National Soils Information System (NASIS) and compiles a spatial dataset from them.*

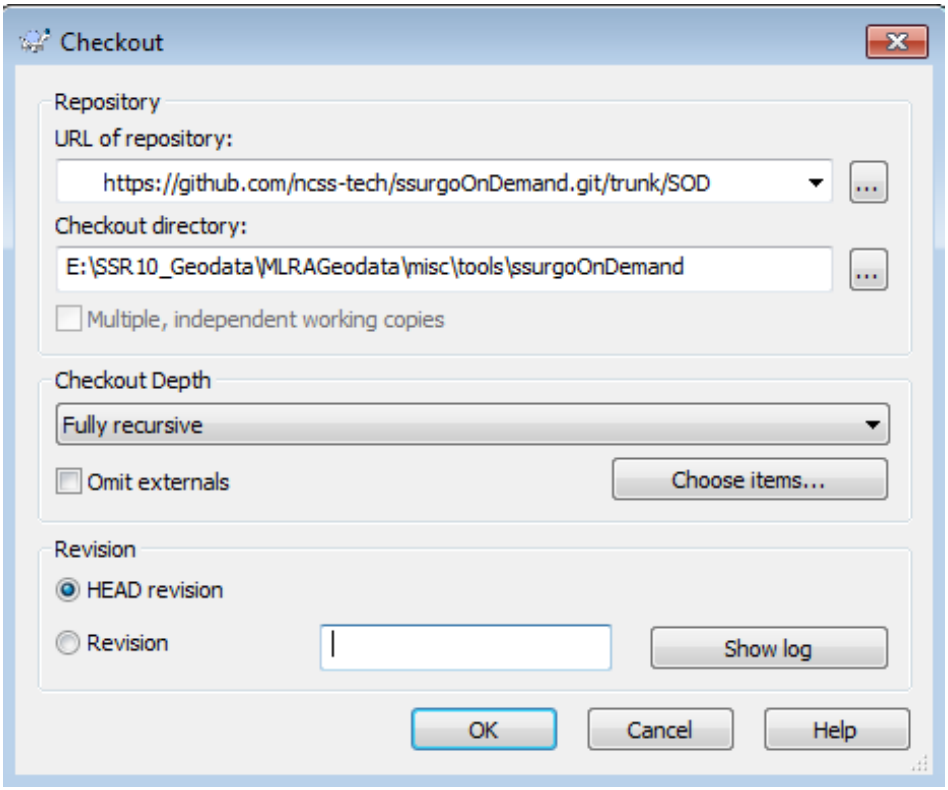
1. Open Windows Explorer and navigate to your designated GitHub folder.
2. Create a new folder called *NASIS-Pedons*.
3. Right-click on the *NASIS-Pedons* folder and choose ***SVN Checkout***.
4. Copy and paste the following URL into the URL of repository:
   https://github.com/ncss-tech/NASIS-Pedons.git/trunk



5. A separate window will be invoked showing the files that have been copied from the repository to the *NASIS-Pedons* folder.

- SSURGOONDEMAND: *user driven SSURGO properties and interpretations*

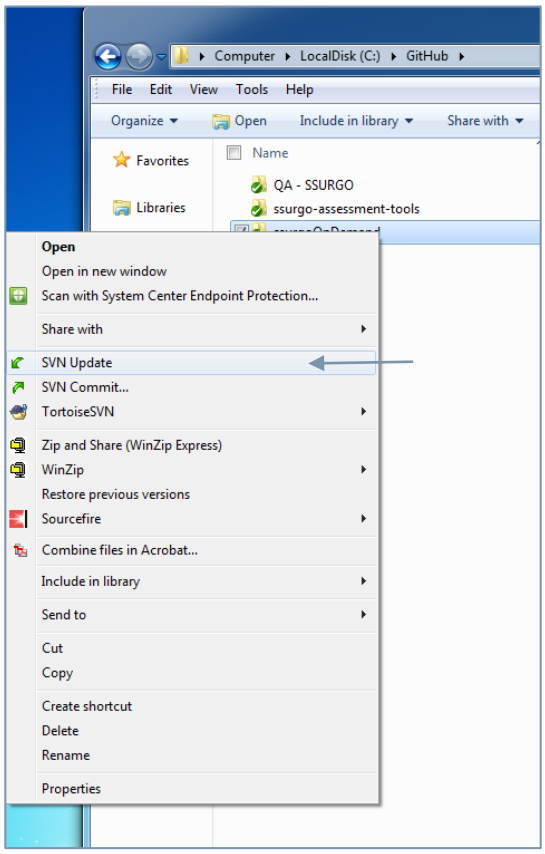
6. Open Windows Explorer and navigate to your designated GitHub folder.
7. Create a new folder called *ssurgoOnDemand*.
8. Right-click on the *ssurgoOnDemand* folder and choose ***SVN Checkout***.
9. Copy and paste the following URL into the URL of repository:
   https://github.com/ncss-tech/ssurgoOnDemand.git/trunk/SOD



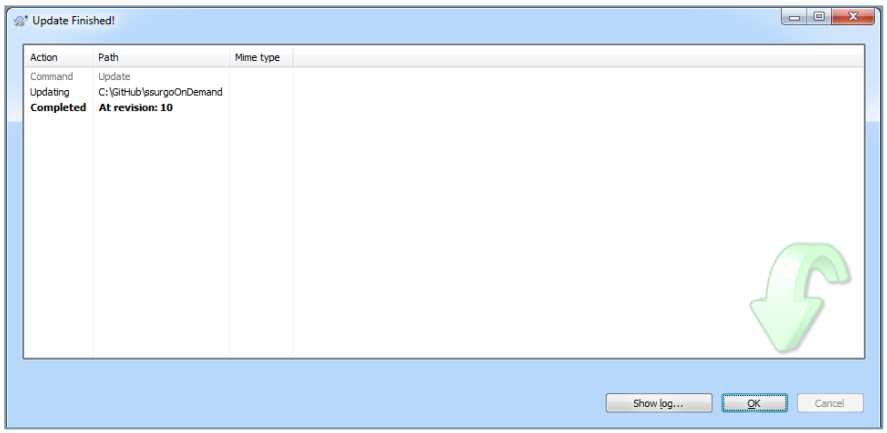
10. A separate window will be invoked showing the files that have been copied from the repository to the *ssurgoOnDemand* folder.

Updating local GitHub Folders

To ensure that you have the most current version of any toolset, you will need to update your folder. Do this by right-clicking the folder name and choosing SVN Update.



When it completes you will see a screen that looks like this:



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Contact information for questions, comments and general troubleshooting

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