United States Department of Agriculture
Natural Resources Conservation Service

Kansas
Resource Conservation Staff

Toolkit

Task Guide #43

Creation of Multiple Soil Maps and Reports for Conservation Planning

March 17, 2009

Abstract

A conservation plan may require multiple soil maps and reports. This task guide outlines the use of the soil_interp_a_ks<fips> layer to develop all soil maps and reports for the Toolkit conservation plan. Information is provided for creating a soil map by Map Unit Symbol (MUSYM) and a Map Unit Description Report from Soil Data Viewer (SDV). Additional instruction is also provided for creating maps and reports for ecological sites and dominant critical soils.

Assumptions

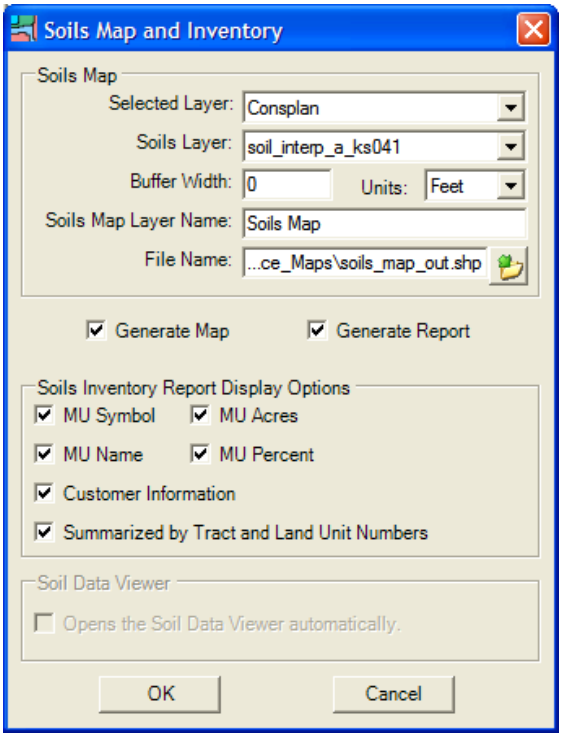
1. A consplan layer has been created with the New Layer button or the Select Plan button has been used to add an existing consplan layer to the Table of Contents (TOC).
2. The Attribute tool has been used to enter Tract, Land Unit Number, and Land Use for the Planned Land Unit layer.
3. The soil_interp_a_ks<fips> layer is available in the TOC.

Instructions

*Note: Click the **Clear Selected Features** button prior to using the Soil Map and Inventory Tool.*

Soil Map and Inventory Tool

1. Access the Soils Map and Inventory tool to create a new soils shapefile
2. Select the consplan layer as the Selected Layer
3. Select the soil_interp layer as the Soils Layer
4. Verify or change the Buffer Width to zero (0)
5. Change the Soils Map Layer Name if required to avoid overwriting existing soils data
6. Change the File Name if required to avoid overwriting existing soils data
7. Check all Soil Inventory Report Display Options
8. Click **OK**
9. A new layer with the name provided in Step 5 will be created and placed at the top of the TOC
10. In the TOC, activate the newly created layer and click the **Calculate Area/Acres** tool



Soil Map Symbology

Note: Variations of the final soils map product are acceptable. Field offices may prefer to create soil maps with a unique symbol for each soil mapunit instead of one standard outline color for all soil mapunits. If this is preferred, Toolkit Task Guide #4 can be used.

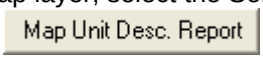
1. Right-click the Soil Layer created on Page 1, then click **Properties**
2. Click **Symbology** tab on the Layer Properties dialog
   Note: The layer is defaulted to a solid fill single symbol representing all features in the layer.
3. In the Symbol frame, click the block representing the current symbol representing the features
4. On the Symbol Selector dialog, change the Fill Color to "No Color"
5. Change the Outline Color to a selection that will display well with the current photo background
6. Optional: Change the Outline Width to a larger value
7. Click **OK**

Soil Map Labels

1. Click the **Map Labels** tool 
2. Check the Scale Labels box
3. Check the first row box in the Label Descriptions frame
4. Select **MUSYM** from the Field List box
5. Click **OK**
6. Click **OK** when prompted to provide an Annotation Layer Name

SDV Map Unit Description Report

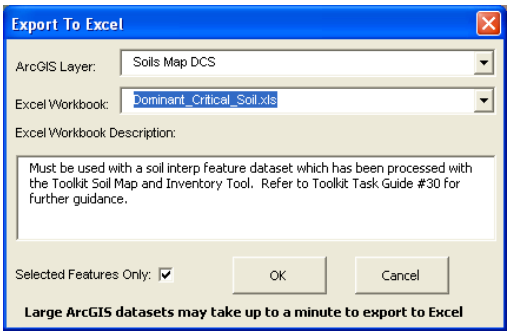
Note: If features are selected in the soils layer prior to SDV being opened, only those soils will be available for the session. The soils available for reports in SDV will not update upon a feature selection change in ArcMap without the SDV session being closed and reopened.

1. Click the **Clear Selected Features** button  to verify all soils in the layer will be available in SDV
2. Click the **Soil Data Viewer** button 
3. If the user is prompted to select a soils database, navigate to F:\geodata\soils\soil_ks<FIPS>\tabular\ and select the county soils database file soil_d_ks<FIPS>.mdb
4. When prompted to select a soil map layer, select the Soil Layer created on Page 1
5. Click the **Map Unit Desc. Report** 

button in the lower middle portion of the SDV interface
6. Print and/or save the map unit description report

Dominant Critical Soil Report

1. Right-click the soil layer created on Page 1 then click **Copy**
2. Right-click the Data Frame named **"Layer"** at the top of the TOC, then click **Paste**
   Note: A new layer has been created in the TOC, but it continues to have the same data source as the original layer.
3. Single-click the layer name twice to rename the newly copied layer to an appropriate name like "DCS Soils Map"
4. Click the **Export To Excel** Tool 
5. From the list box for the ArcGIS Layer, select the new layer which was created using Steps 1-3
6. From the list box for the Excel Workbook, select **Dominant_Critical_Soil.xls**
7. Check **Selected Features Only** to process only features currently selected in the ArcGIS Layer
   Or
   Uncheck **Selected Features Only** to process all features in the ArcGIS Layer
8. Click **OK**
9. Microsoft Excel will open after a short time; it may open in front of your ArcGIS session or it may open minimized in your task bar.

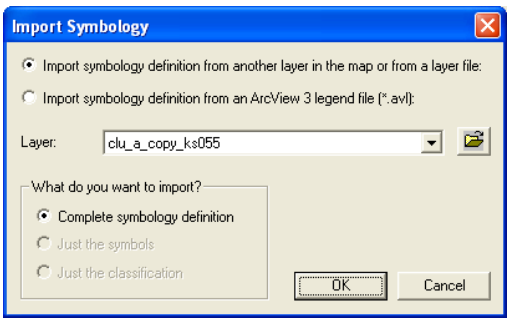


Format of the Report

The Dominant Critical Soil Report is an Excel Pivot Table which is formatted to display the dominant critical soils information for a Planned Land Unit. The Planned Land Units are then grouped by Tract Number. A selected record indicates that the MUSYM acreage comprises at least 15 percent of the land unit acres and the soil mapunit water erosion (RKLS/T) or wind erosion (CI/T) value is greater than 6. The report defaults to display all land use types. The Land Use list box in the upper left of the worksheet allows for the selection of a land use; the report will automatically update accordingly to display only the information associated with the selected land use.

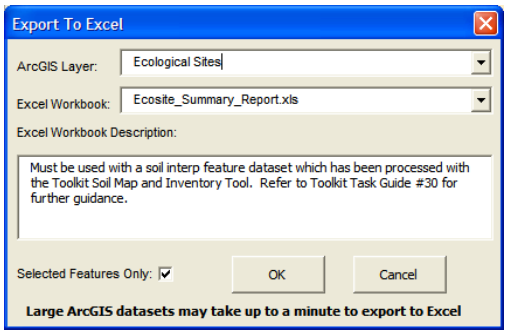
Dominant Critical Soil Layer

1. Right-click on the layer created with the Soils Map and Inventory tool in Steps 1-9
2. Left-click **Properties**
3. Click **Symbology** tab on the Layer Properties dialog
4. Click **Import**; the Import Symbology Dialog will display
5. Click the **Browse** button  and navigate to C:\geodata\project_data\nrcs\tools\legends and select the appropriate layer file (*.lyr) from the choices listed below and displayed to the right
   a. Dominant_Critical_Soil_Water_All_landuses.lyr
      High and very high water erosion soils for all land uses
   b. Dominant_Critical_Soil_Water_Crop.lyr
      High and very high water erosion soils for cropland
   c. Dominant_Critical_Soil_Wind_All_landuses.lyr
      High and very high wind erosion soils for all land uses
   d. Dominant_Critical_Soil_Wind_Crop.lyr
      High and very high wind erosion soils for all cropland
6. Click **OK** on the four open dialogs



Ecological Site Report

1. Right-click the soil layer created on Page 1 then click **Copy**
2. Right-click the Data Frame named “Layer” at the top of the TOC, then click **Paste**
   Note: A new layer has been created in the TOC, but it continues to have the same data source as the original layer.
3. Single-click the layer name twice to rename the newly copied layer to an appropriate name like “Ecological Sites”
4. Click the **Export To Excel** tool 
5. From the list box for the ArcGIS Layer, select the new layer which was created using Steps 1-3
6. From the list box for the Excel Workbook, select Dominant_Critical_Soil.xls
7. Check **Selected Features Only** to process only features currently selected in the ArcGIS Layer
   Or
   Uncheck **Selected Features Only** to process all features in the ArcGIS Layer
8. Click **OK**
9. Microsoft Excel will open after a short time, it may open in front of your ArcGIS session or it may open minimized in your task bar



Ecological Site Map

1. Double-click the layer in the TOC
2. Click the **Symbology** tab on the Layer Properties dialog
3. Click **Categories,** then **Unique values**
4. Click the **Value Field** list box and select **EcoSiteNm** to use for unique values
5. Click **Add All Values**
6. Click **OK**