# Introduction

Some of the following sections are background, and some correspond to specific tasks that need to be performed whenever a new version of NASIS is released, or when an updated set of NASIS metadata is released independent of a new NASIS release.

The following tasks need to be performed whenever a new version of NASIS is released, or whenever NASIS domains are updated without releasing a new version of NASIS. The second case was rare in the first twenty years of NASIS, but it happening more often as not since about 2014. The NASIS domains are the static domains whose metadata resides in tables MetadataDomainMaster and MetadataDomainDetail.

## Version.txt (background)

Some of these changes pertain to the file named version.txt. This file is provided with any SSURGO export, regardless of source (NASIS, Staging Server, Soil Data Mart, Web Soil Survey). A copy of this file is provided with the tabular data, and a copy of this file is also provided with the spatial data.

This file is read by the process that imports data into a SSURGO Template database in order to verify that the version of the data about to be imported is compatible with the structure of the SSURGO Template database into which that data will be imported.

As of NASIS 7, this file should include the following line:

2.3.2

The correct SSURGO version is now 2.3.3. Why the SSURGO version in this file doesn’t currently match the SSURGO version of data about to be imported is a separate issue that needs to be resolved at some point. It has to do with some considerations that that were failed to take into account when this check was first programmed.

## NASIS 6 Style Metadata Format (background/how to)

As of NASIS 6.0, the older metadata tables in the NASIS, Staging Server, Soil Data Warehouse and Soil Data Mart databases were replaced with newer versions. This newer metadata is referred to as “NASIS 6 Style Metadata”.

The names of the NASIS 6 Style Metadata tables are:

MetadataAlignment

MetadataCardinality

MetadataColumnLookup

MetadataDatetimePrecision

MetadataDefaultType

MetadataDomainDetail

MetadataDomainMaster

MetadataIndexDetail

MetadataIndexMaster

MetadataLogicalDataType

MetadataPhysicalDataType

MetadataRelationshipDetail

MetadataRelationshipMaster

MetadataSortDirection

MetadataSortType

MetadataTable

MetadataTableCollection

MetadataTableColumn

MetadataVersion

In the NASIS Project Data Model Repository, NASIS 6 Style Metadata is typically generated by running a set of reports macro whose name is in the form:

NREPO – Table - MetadataTable

These reports are found in the Soil Metadata Repository Folder in the Reports Explorer Pane.

This is to be taken care of each time a new version of a data model is released. This metadata is always included as part of any new release.

## Original SSURGO Metadata Format (background/how to)

The metadata tables in a SSURGO Template database have never been updated since the first version of the SSURGO Template database was released. Below is the complete list of those metadata tables and files names.

|  |  |  |
| --- | --- | --- |
| Table Name in the NASIS Project Micro Access Data Model Repository | Table Name in a SSURGO Template Database | Name of the corresponding ASCII file provided as part of a SSURGO export |
| SSURGO - Metadata Static Domain Detail | mdstatdomdet | msdomdet.txt |
| SSURGO - Metadata Static Domain Master | mdstatdommas | msdommas.txt |
| SSURGO - Metadata Static Index Detail | mdstatidxdet | msidxdet.txt |
| SSURGO - Metadata Static Index Master | mdstatidxmas | msidxmas.txt |
| SSURGO - Metadata Static Relationship Detail | mdstatrshipdet | msrsdet.txt |
| SSURGO - Metadata Static Relationship Master | mdstatrshipmas | msrsmas.txt |
| SSURGO - Metadata Static Tables | mdstattabs | mstab.txt |
| SSURGO - Metadata Static Table Columns | mdstattabcols | mstabcol.txt |

In the NASIS Project Data Model Repository, these tables are populated by running the reports in the Soil Metadata Repository with the names of NREPO – Metadata\*.

The ASCII files provided with a SSURGO export are created by running the reports in the Soil Metadata Repository named “NREPO -SSURGO\*.

NREPO - SSURGO - export\_version

NREPO - SSURGO - msdomdet

NREPO - SSURGO - msdommas

NREPO - SSURGO - msidxdet

NREPO - SSURGO - msidxmas

NREPO - SSURGO - msrsdet

NREPO - SSURGO - msrsmas

NREPO - SSURGO - mstab

NREPO - SSURGO - mstabcol

NREPO - SSURGO - version

## SSURGO Metadata Reports (background/how to)

As of NASIS 6.1, all of the metadata reports mentioned in this document are NASIS 6 Style Metadata reports. In the NASIS Project Data Model Repository, the names of these five reports are:

NASIS 6 Style Metadata – Domains

NASIS 6 Style Metadata – Relationships

NASIS 6 Style Metadata - Table Column Descriptions

NASIS 6 Style Metadata - Tables and Columns

NASIS 6 Style Metadata - Unique Constraints

When these reports are generated, the name of a report is in the form “NASIS 6 Style Metadata - Relationships.pdf”. Before making these reports available on a web page, each report needs to be renamed where “NASIS 6 Style” is replaced with “SSURGO”.

Note that the repository includes two SSURGO data models:

# Note about the Following Sections

The following sections are organized by CoLab project. A lot of this work requires a CoLab tracker to be created, and CoLab trackers are project specific. In some cases, boundaries may be fuzzy, and some projects, like NASIS, include more than one major application (NASIS and the Staging Server).

# NASIS/Staging Server SSURGO Export and NASIS Website Metadata Page Related (tasks)

For any SSURGO export from NASIS or the Staging Server, updated versions of the ASCII Metadata files need to be provided. These files should be pipe field delimited and double quote text delimited. These files should be provided with the tabular data but not with the spatial data. These metadata files are also used as input to the process that creates table “muaggatt”.

For any SSURGO export from NASIS or the Staging Server, an updated version of file “version.txt” needs to be provided. This file should not include any field or text delimiters. A copy of this file should be included with both the tabular data and the spatial data.

Here is the complete list of the files that need to be provided:

msdomdet.txt

msdommas.txt

msidxdet.txt

msidxmas.txt

msrsdet.txt

msrsmas.txt

mstab.txt

mstabcol.txt

version.txt

For a new release of NASIS, a new NASIS website metadata page needs to be created with new versions of each metadata report.

For NASIS domain updates without a new release of NASIS, the NASIS website’s metadata page for the existing version of NASIS needs to be updated with the new version of each metadata report. Because the SSURGO metadata version should be updated even for an update of NASIS domains without a new release of NASIS, all SSURGO metadata reports should be updated because SSURGO metadata version appears at the top of each page in each report.

Soil Data Mart SSURGO/STATSGO Export and Website Related (task)

For any SSURGO or STATSGO export from the Soil Data Mart, updated versions of the ASCII Metadata files need to be provided. These files should be pipe field delimited and double quote text delimited. These files should be provided with the tabular data but not with the spatial data. These metadata files are also used as input to the process that creates table “muaggatt”.

For any SSURGO or STATSGO export from the Soil Data Mart, an updated version of file “version.txt” needs to be provided. This file should not include any field or text delimiters. A copy of this file should be included with both the tabular data and the spatial data.

# Soil Data Viewer Rule Related (tasks)

For any static domain to which choices have been added, deleted or choice labels changes have been made, all soil property SDV rules for any soil property based on that static domain need to be updated. This is because the map legend for any such SDV rule is based on the choice labels of that static domain. Here are the steps that need to be performed for this update.

1. Open the Web Soil Survey and Rule and Report Manager

2. Select the SDV rule in question.

3. Commence editing that SDV rule.

4. Click the tab labeled “Map Legend”.

5. Click the button under the Custom Map Legend grid whose label is “Reset to Defaults”. This will refresh the Custom Map Legend grid for this domain.

6. Save the updates to this SDV rule.

To determine the domains to which choices have been added, deleted or choice labels changes have been made, run the NASIS Report titled “Changed domains”, which is owned by NASIS Site “Soil Metadata Repository”, against the National database.

For the first parameter, “Older domain group name”, select the name of the domain group for the existing NASIS release.

For the second parameter, “Newer domain group name”, enter the name of the domain group for the pending NASIS release.

After generating this report, save it to an ASCII text file.

To determine which soil property SDV rules need to be updated, paste the consolidated list at the bottom of that report into a query like the following, at the location indicated below:

select distinct attributename

from [SmileyNP002\SmileyNP002].sdm.dbo.sdvattribute,

[SmileyNP002\SmileyNP002].sdm.dbo.MetadataTable,

[SmileyNP002\SmileyNP002].sdm.dbo.MetadataTableColumn,

[SmileyNP002\SmileyNP002].sdm.dbo.MetadataDomainMaster

where attributelogicaldatatype = 'choice'

and attributetablename = MetadataTable.TablePhysicalName

and MetadataTable.TableID = MetadataTableColumn.TableID

and attributecolumnname = MetadataTableColumn.ColumnPhysicalName

and MetadataTableColumn.DomainID = MetadataDomainMaster.DomainID

and DomainName in (

paste here

)

order by attributename

That section will look something like:

'atterberg\_sample\_condition',

'bedrock\_kind',

'bottom\_type',

'bulk\_density\_method',

'carbonate\_dev\_stage\_cf',

'carbonate\_dev\_stage\_fe',

'classification\_type',

After pasting this section, remove the trailing comma before “)”, so the completed query will look something like:

select distinct attributename

from [SmileyNP002\SmileyNP002].sdm.dbo.sdvattribute,

[SmileyNP002\SmileyNP002].sdm.dbo.MetadataTable,

[SmileyNP002\SmileyNP002].sdm.dbo.MetadataTableColumn,

[SmileyNP002\SmileyNP002].sdm.dbo.MetadataDomainMaster

where attributelogicaldatatype = 'choice'

and attributetablename = MetadataTable.TablePhysicalName

and MetadataTable.TableID = MetadataTableColumn.TableID

and attributecolumnname = MetadataTableColumn.ColumnPhysicalName

and MetadataTableColumn.DomainID = MetadataDomainMaster.DomainID

and DomainName in (

'atterberg\_sample\_condition',

'bedrock\_kind',

'bottom\_type',

'bulk\_density\_method',

'carbonate\_dev\_stage\_cf',

'carbonate\_dev\_stage\_fe',

'classification\_type' <- Trailing comma removed

)

order by attributename

This query will return the name of all soil property SDV rules that need to be updated due to domain additions, deletions or choice label changes.

This query is to be run in SQL Management Studio. And, it will need some editing.

# Soil Data Mart SSURGO/STATSGO Export and Website/Database Related (tasks)

For any SSURGO or STATSGO export from the Soil Data Mart, updated versions of the ASCII Metadata files need to be provided. These files should be pipe field delimited and double quote text delimited. These files should be provided with the tabular data but not with the spatial data.

For any SSURGO or STATSGO export from the Soil Data Mart, an updated version of file “version.txt” needs to be provided. This file should not include any field or text delimiters. A copy of this file should be included with both the tabular data and the spatial data.

Here is the complete list of the files that need to be provided:

msdomdet.txt

msdommas.txt

msidxdet.txt

msidxmas.txt

msrsdet.txt

msrsmas.txt

mstab.txt

mstabcol.txt

version.txt

This needs to be done whenever a new version of NASIS is released, or when an updated set of NASIS metadata is released independent of a new NASIS release, *regardless of whether or not a new version of the SDM database is being released at the same time*.

In addition, the metadata reports on the SDM’s SSURGO metadata page need to be updated, regardless of whether or not a new version of the SDM database is being released at the same time.

# SSURGO Template Database Related (tasks)

Updated versions of the national SSURGO Template databases need to be provided.

Make sure that each updated database reflects:

1. An updated Item Narrative for Item Name “SSURGO Metadata Change History”.

2. An updated Item Value for Item Name “SSURGO Metadata Version”.

3. An updated Item Narrative for Item Name “Template Database Change History”.

4. An updated Item Value for Item Name “Template Database Version”.

This information resides in the table named “SYSTEM – Template Database Information”. “Item Name”, “Item Value” and “Item Narrative” are columns in this table.

The metadata tables (mdstat\*) in each SSURGO Template database need to be updated.

Tables "SYSTEM - Geomorphic Feature Type" and "SYSTEM - Geomorphic Feature" should be updated.

# Pedon PC Related (tasks)

In the Pedon PC Support Data section of the NASIS Downloads page, update the files associated with the following links:

Download Windows Pedon Domains

To create this data, run the MS Access Repository macro named “Pedon PC 6\_2 - Pedon PC Metadata - Generate”. This macro writes the following two files to C:\REPO\Windows Pedon\Metadata:

wpdommas.txt

wpdomdet.txt

The two files created by this process should then be zipped into a file named “WindowsPedonDomains.zip”.

Download National (Pangaea) Geographic Area Lookup Data

To create this data, run the following two NASIS reports and save the output to files named “areatype.txt” and “area.txt”, respectively. These two files should then be zipped into a file named “NationalGeographicAreas.zip”.

WINPEDON - Export Pangaea Area Types (6.2.7) (no quads)

WINPEDON - Export Pangaea Areas (6.2.7) (no quads)

Download Geomorphic Feature Lookup Data

To create this data, run the following two NASIS reports and save the output to files named “geomorft.txt” and “geomorf.txt”, respectively. These two file should then be zipped into a file named “GeomorphicFeatures.zip”.

WINPEDON - Export Geomorphic Feature Types (6.2.7)

WINPEDON - Export Geomorphic Features (6.2.7)

Download Ecological Site Lookup Data

To create this data, run the NASIS report titled “WINPEDON - Export Ecological Sites (6.2.7)” and save the output to a file named “ecosite.txt”.

Download New/Empty Pedon Database

In this database, the Pedon Domains, the National Geographic Areas, the Geomorphic Features and Ecological Sites should be updated. Use the capabilities of Pedon PC itself to import this data. Note that all support data files must be unzipped prior to importing this data into a pedon database.

To update this data, do the following:

1. Move the underlying pedon database to C:\Pedon.

2. Put all of the files to be imported into the same directory.

3. Delete any existing contents of the following tables in the pedon database. Data in any child of these tables will automatically be deleted in this process.

areatype

ecologicalsite

geomorfeattype

localplant

metadata\_domain

Note that in a New/Empty pedon database, table “localplant” should not contain any records, period.

4. Start Pedon PC. From the Main Menu, select “Setup Menu”. From the Setup Menu, select “Update Support Data”.

5. On the Update Support Data form, click the button labeled “Browse”, navigate to the directory that contains the data to be imported and select ANY file in that directory.

6. Select “Update Geographic Area (area.txt and areatype.txt)”, and then click the button labeled “OK”.

7. Select “Update Geomorphic Features (geomorf.txt and geomorft.txt)”, and then click the button labeled “OK”.

8. Select “Update Ecological Site (ecosite.txt)”, and then click the button labeled “OK”.

9. Select “Update General Choice Lists (wpdomdet.txt and wpdommas.txt)”, and then click the button labeled OK.

10. Click the button labeled “Close”.

11. Click the Office Button in the upper left corner of the Microsoft Access window, select “Manage” and then select “Compact and Repair Database”.

12. Close Pedon PC.

# Web Soil Survey SSURGO/STATSGO Export Related (tasks)

For any SSURGO or STATSGO export from Web Soil Survey, updated versions of the ASCII Metadata files need to be provided. These files should be pipe field delimited and double quote text delimited. These files should be provided with the tabular data but not with the spatial data.

For any SSURGO or STATSGO export from Web Soil Survey, an updated version of file “version.txt” needs to be provided. This file should not include any field or text delimiters. A copy of this file should be included with both the tabular data and the spatial data.

Here is the complete list of the files that need to be provided:

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msdommas.txt

msidxdet.txt

msidxmas.txt

msrsdet.txt

msrsmas.txt

mstab.txt

mstabcol.txt

version.txt

# Things that need to be Rethought and possibly Reengineered at some point

1. What can be done to help us to remember that the things in this document need to be done whenever a new version of NASIS is released, or whenever NASIS domains are undated without releasing a new version of NASIS?

2. The process for determining if the data about to be imported into a SSURGO Template database is compatible with the version of that database needs to rethought and re-implemented. At the current time, the first line of this file must be “SSURGOV2.1”, even though the current version of SSURGO is 2.2.

3. We need to reexamine if there is a good reason for including the SSURGO metadata in a SSURGO Template database. Why are we updating this metadata whenever a new version of NASIS is released, or whenever NASIS domains are updated without releasing a new version of NASIS? As far as I can remember, there is no process in a SSURGO Template database that depends on this metadata. Of course, this would need to be verified.

4. The SSURGO metadata in a SSURGO Template database is currently preloaded. If we decide that we do still need the SSURGO metadata in a SSURGO Template database, that SSURGO metadata should be imported at the same time that the soil tabular data is imported.

5. We need to determine if there is a good reason for including geomorphic feature types and geomorphic features in a SSURGO Template database. Why are we updating this information whenever a new version of NASIS is released, or whenever NASIS domains are updated without releasing a new version of NASIS? As far as I can remember, there is no process in a SSURGO Template database that depends on this data. Of course, this would need to be verified.