National Park Service
U.S. Department of the Interior

Natural Resource Stewardship and Science

NISIMS Technical Guide

2019

Treated (left) and untreated (right) Phragmites australis *sites, Cape Cod National Seashore. NPS photo.*

Contents

Page

1. Introduction to NISIMS 1
2. NISIMS Field Geodatabase 3
    - 2.1 General Instructions 3
    - 2.2 Field Geodatabase Edits 4
        - 2.2.1 Adding Field 4
        - 2.2.2 Copying Features 10
3. NISIMS Data Dictionary 16
    - 3.1 General Instructions 16
    - 3.2 Preparing and Uploading the Data Dictionary 17
    - 3.3 Collecting Data in the Field 29
    - 3.4 Downloading Data from the GPS Unit 35
    - 3.5 Exporting Data to a File Geodatabase 38
4. NISIMS in Collector for ArcGIS 49
    - 4.1 General Instructions 49
    - 4.2 Creating a Group in ArcGIS Online 50
    - 4.3 Adding Feature Classes to Collector 57
    - 4.4 Collecting Data in the Field with Collector 82
    - 4.5 Exporting NISIMS Layers from ArcGIS Online 95
5. NISIMS Web Interface 101
    - 5.1 Uploading Data 101
    - 5.2 Quality Checking Data 107
    - 5.3 Accessing Reports 112
    - 5.4 Adding Users 121

Appendix A. NISIMS Field Geodatabase Diagram 126

Appendix B. NISIMS Data Dictionary Structure 128

Appendix C. Links to NISIMS Files and Documents 131

1. Introduction to NISIMS

The National Invasive Species Information Management System (NISIMS) is the NPS standard invasive species data management tool. NISIMS was originally created to be a comprehensive tool by the Bureau of Land Management (BLM) to standardize the collection of invasive species data. NPS adopted the BLM's data management system for invasive species to standardize the collection and management of exotic plant data collected by the Exotic Plant Management Teams (EPMT). NISIMS was identified as an appropriate replacement for the Alien Plant Control and Monitoring database (APCAM), the previous exotic plant data management system, because it requires the input of data identified as important to collect by NPS, and also includes a spatial component that allows for the mapping and further analysis of infestations. Further, NISIMS was chosen due to its potential for standardizing exotic plant data management across DOI agencies.

NISIMS maintains five categories of exotic species management spatial data: weed survey, weed infestation, proposed treatment, treatment, and photo location data. Each of the five categories of location data are linked to attribute data that provide more detailed information related to each location.

- **Weed survey** data is collected as part of an exotic plant surveillance program. The results of surveillance for this category are included whether an exotic plant species was detected or not.
- **Weed infestation** data is collected when a species infestation has been identified. Data maintained in this category include those infestations which have been identified as part of a formal monitoring program and those infestations identified incidentally. If monitoring results in no finding of a species, record it as a weed survey.
- **Proposed treatment** data is collected as part of the formal treatment proposal process. Data in this category include information that is important to know prior to treatment and the steps that were taken in obtaining proposal approval.
- **Treatment** data is collected during the treatment and control of an infestation in the field. Data in this category include detailed information on the methods used to control and eradicate exotic plants at an infestation location. Treatment component data is further split into six components: biological, chemical, fire, manual, mechanical, restoration, and revegetation.
- **Photo location** data is collected to identify the locations where photos were taken in the field. Photo locations are not spatially related to the other types of data; however, may be mapped to identify which infestation the photos represent.

The NISIMS Technical User Guide describes the tools and applications that are used to collect and upload NISIMS data. This guide describes three methods for creating data that may be uploaded to the NISIMS Spatial Database Engine (SDE) geodatabase, the central database that contains invasive plants data for the NPS Invasive Plants Program. Instructions show you how to manually add data to the NISIMS Field Geodatabase, and how to collect GPS data using the NISIMS Data Dictionary and Collector for ArcGIS®. Further instructions are included for uploading data to and using the NISIMS Website.

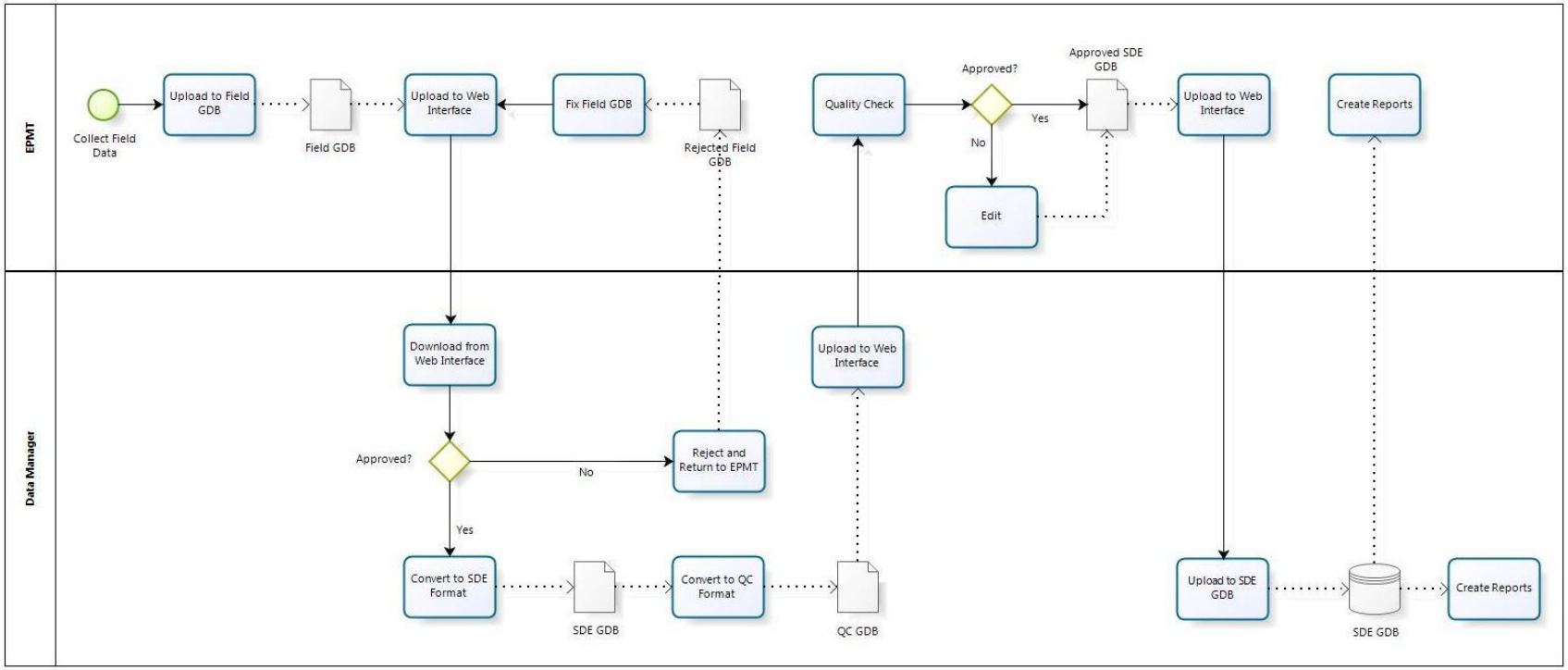


Diagram of NISIMS workflow

2. NISIMS Field Geodatabase

2.1 General Instructions

The NISIMS field geodatabase was created to expedite the transition of exotic plant data from the field collection stage to the final SDE geodatabase. The field geodatabase contains four feature datasets and 34 feature classes. Feature classes within the ProposedTreatmentData, TreatmentData, WeedInfestationData, and WeedSurveyData feature datasets have been created to maintain point, line, and polygon data. Photo locations are only collected as points, and maintained in the PhotoLocation feature class. A diagram of the NISIMS Field Geodatabase can be found in Appendix A.

Domains have been created within the geodatabase to standardize the entry of data within fields. If creating/editing data in ArcMap, these values may be selected from a drop-down list. Other values may be added if data is directly uploaded from the GPS unit; however, only those values within the domains should be used. If it is necessary to add other values not found in the domain, please contact the WASO data manager.

In order to ensure that data from the field geodatabase is successfully uploaded to the SDE geodatabase, some general instructions are provided:

- As it is currently being supplied, the field geodatabase is in the personal geodatabase format (.mdb); however, you may also copy all files over to a file geodatabase if you would rather use this format. Just be sure to maintain the same structure that is found in the personal geodatabase (i.e. maintain feature classes in the feature datasets).

- The feature datasets and feature classes have been assigned a geographic coordinate system of NAD 1983; however, you may maintain data in your preferred coordinate system. It will be converted by the WASO data manager prior to uploading to the SDE geodatabase.

- You may delete any feature classes you are not using from the geodatabase.

- Do not rename the feature classes that you are using.

- Do not rename any of the fields from the feature classes you are using.

- If you wish to add a value to any of the domains in the geodatabase, please contact the WASO data manager.

- If you need help modifying the field geodatabase for your team, contact the WASO data manager.

2.2 Field Geodatabase Edits

You may find that you need to add fields to the NISIMS Field Geodatabase in order to list more species or herbicides to a feature. Such edits to the field geodatabase are permitted so long as naming conventions are followed (see Section 2.4 or Appendix C). You may also copy features in order to show that more than one event was conducted at a site. Instructions for how to do this in ArcGIS follow.

2.2.1 Adding Fields

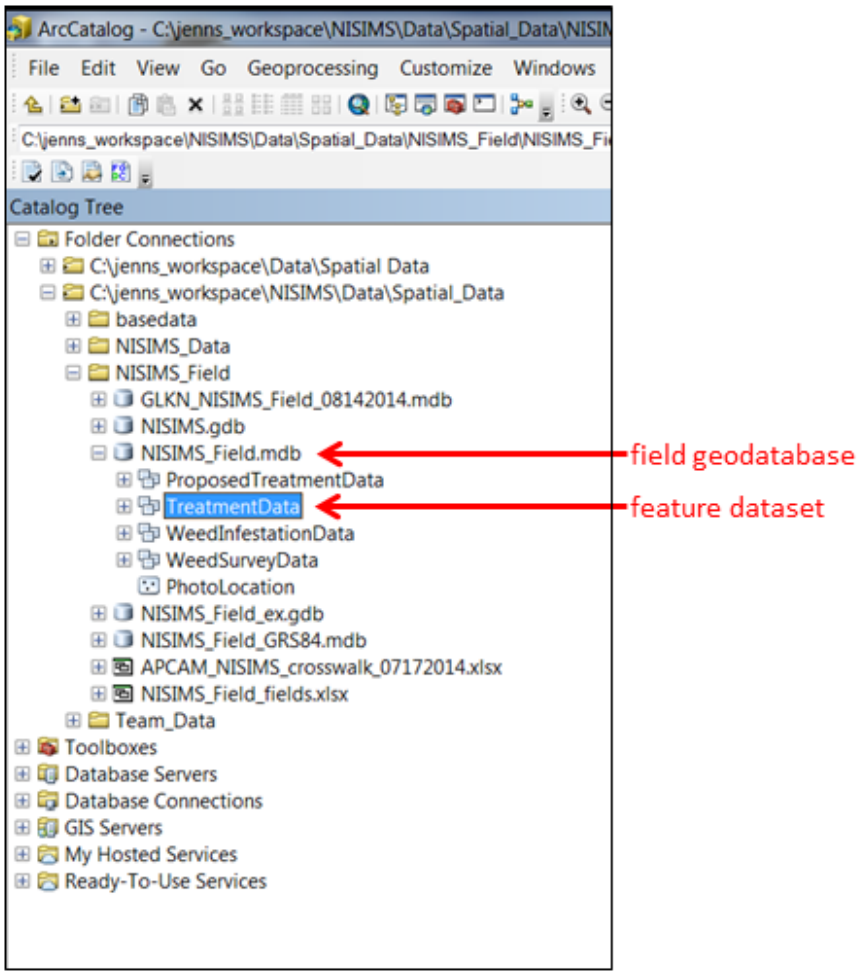
Some of the feature classes in the field geodatabase allow for multiple values to be collected for each feature. For instance, more than one species may be linked to a single feature in the treatment component feature classes. In order to capture this data, you may add additional fields with the field name plus a number added indicating that it is an additional species (e.g. SCNTFC_CD2, SCNTFC_CD3, etc.). Additional fields that are related to the added field must be added, as well. For instance, the estimated cover rate is required for each species added to the treatment component feature classes (e.g. EST_CVR_RT2, EST_CVR_RT3, etc.).

Additional fields have already been added to the feature classes in the field geodatabase to help guide you in what is required. Fields beyond those already included may be added using the following instructions:

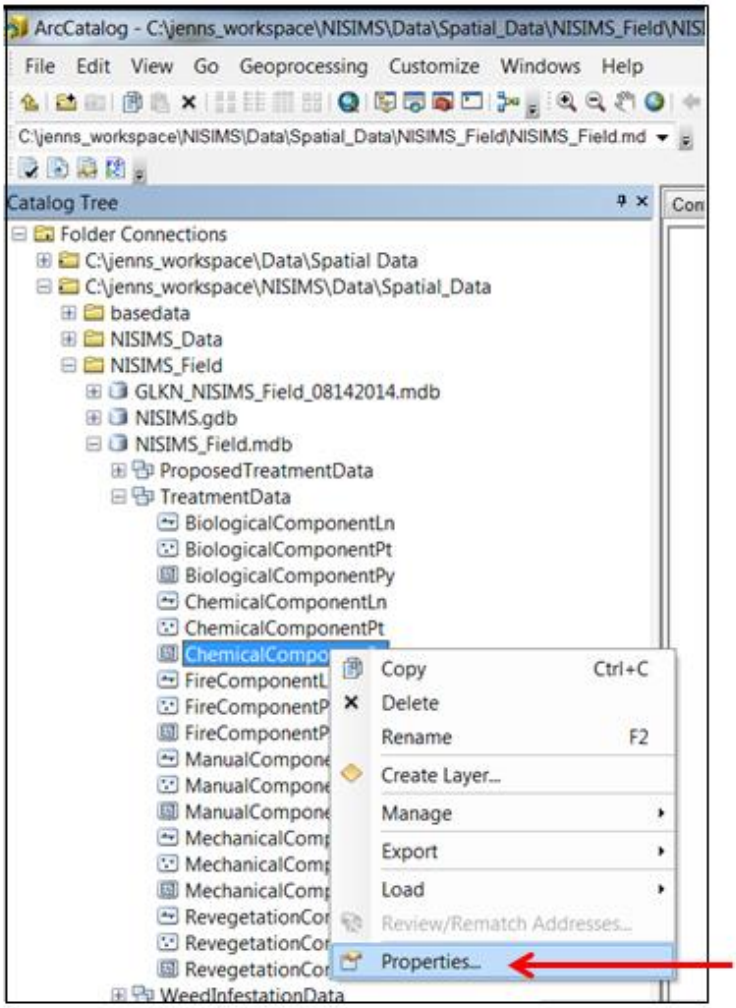
Instructions: Add a second herbicide to the ChemicalTreatmentPy feature class.

Step 1. Open ArcCatalog.

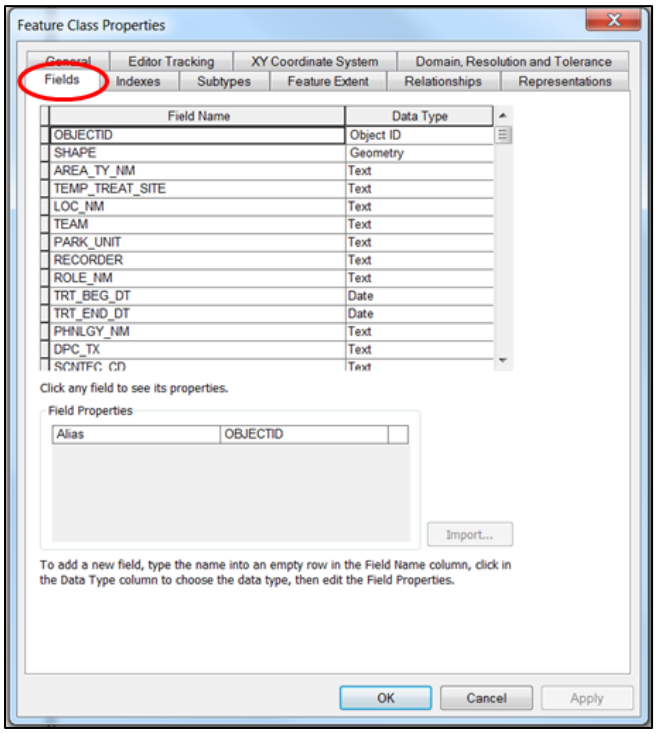
Step 2. Navigate to the TreatmentData dataset within your field geodatabase.



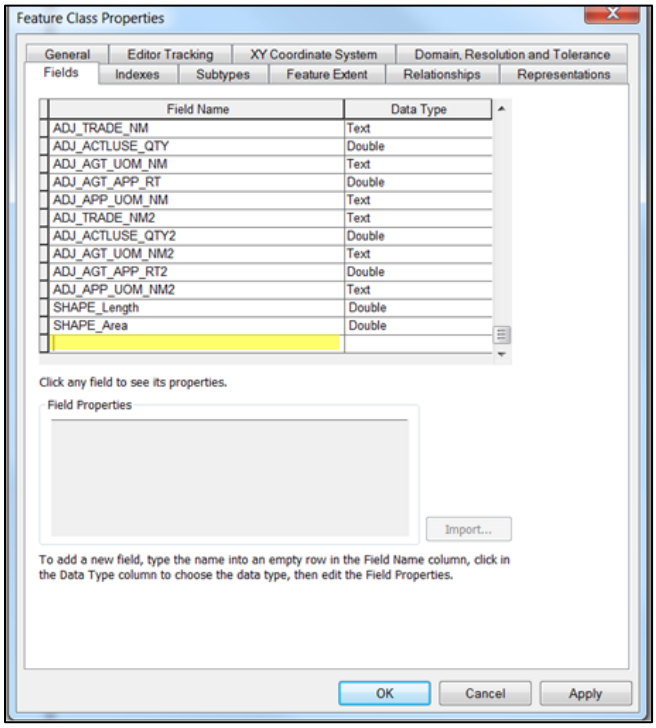
Step 3. Right click on ChemicalTreatmentPy and select Properties.



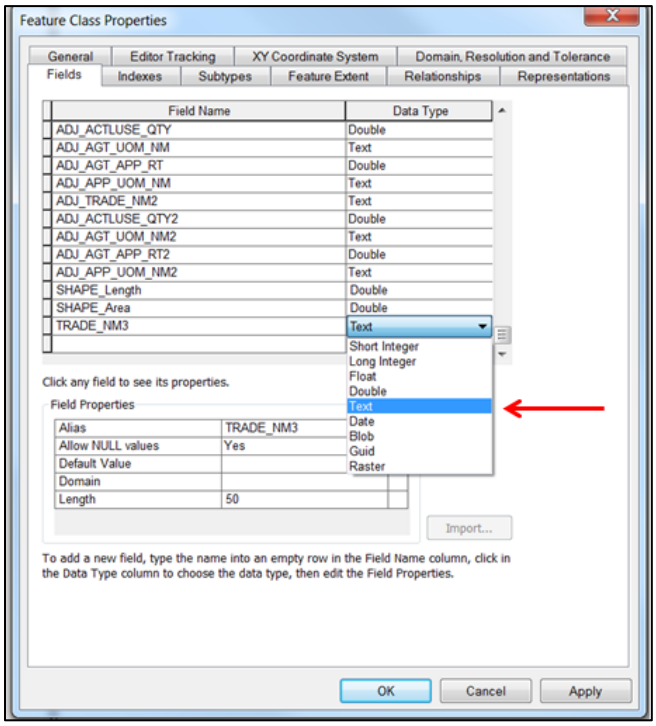
Step 4. Select the Fields tab in the Properties window.



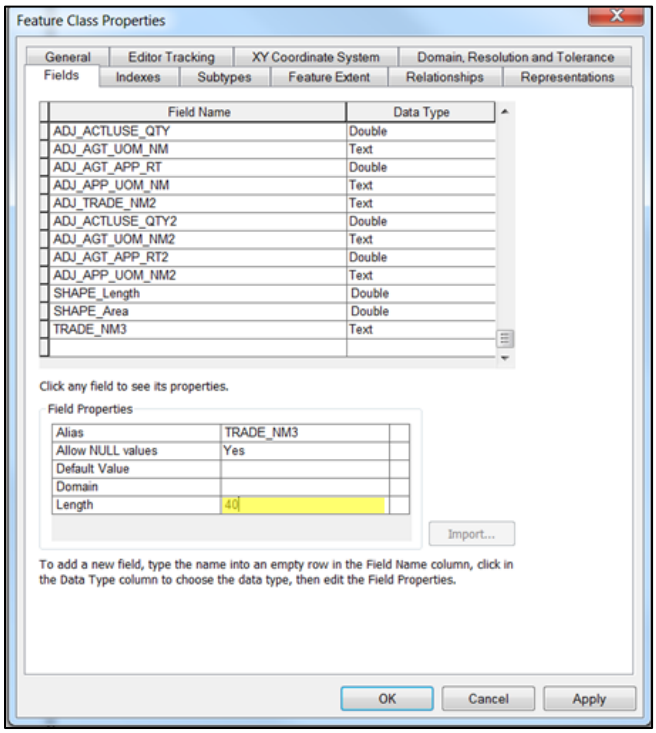
Step 5. Scroll to the bottom of the fields list and click in an empty box under the "Field Name" heading. Type TRADE_NM3.



Step 6. Click in the box under the “Data Type” heading, and select TEXT.



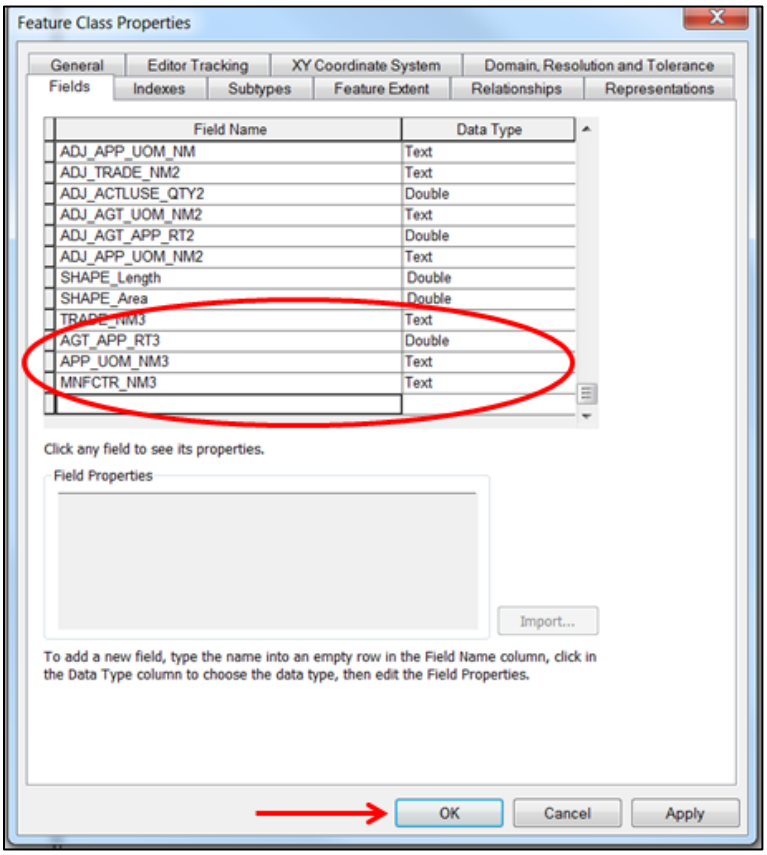
Step 7. In the Field Properties box, click in the box next “Length” and enter 40.



Step 8. Repeat Steps 5-7 for the remaining required fields, entering the information in the table below.

Field Name	Data Type	Domain	Length
AGT_APP_RT3	DOUBLE		
APP_UOM_NM3	TEXT	Application_Rate_UOM_Type	30
MNFCTR_NM3	TEXT	Manufacturer_Name	30
EPAREGISTRATIONUMBER3	TEXT	EPA Registration Number 3	50

Step 9. Once finished, click OK.



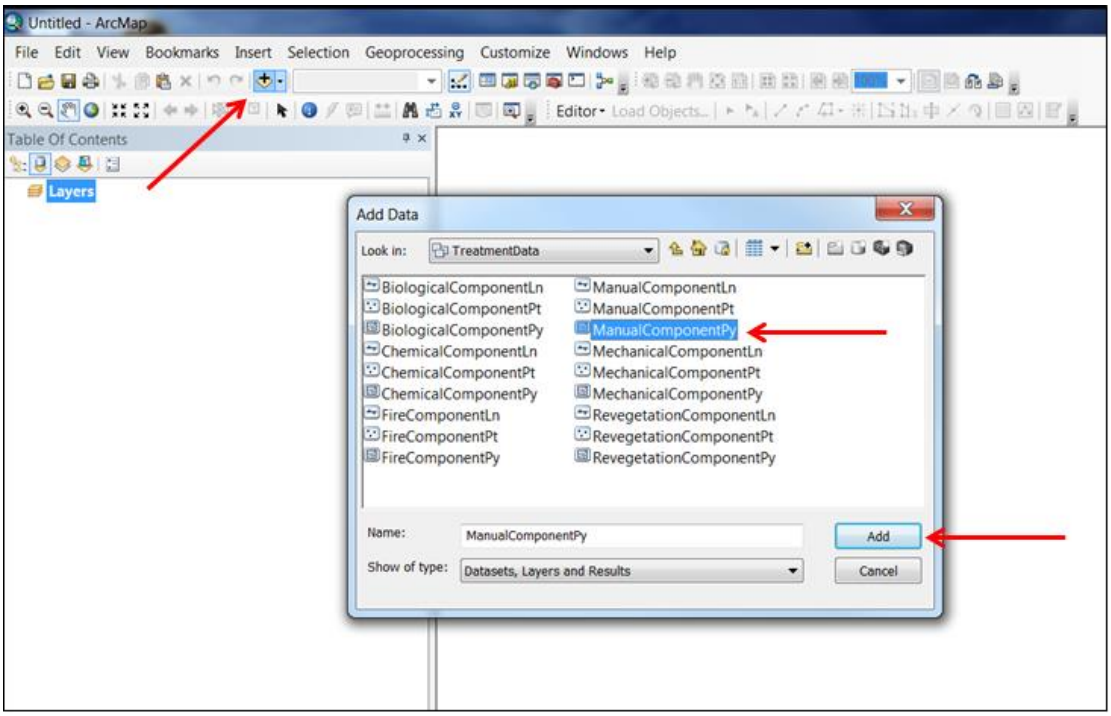
2.2.2 Copying Features

If you do not wish to add additional fields to the feature classes, you may also copy the features that represent multiple values, and populate each of the copied feature's fields with the appropriate values (e.g. feature 1: SCNTFC_CD = ALPE4, EST_CVR_RT = 50; feature 2: SCNTFC_CD = PUMO, EST_CVR_RT = 30, etc.). The appropriate relationships in SDE will be created during the uploading process. Instructions for copying a feature follow:

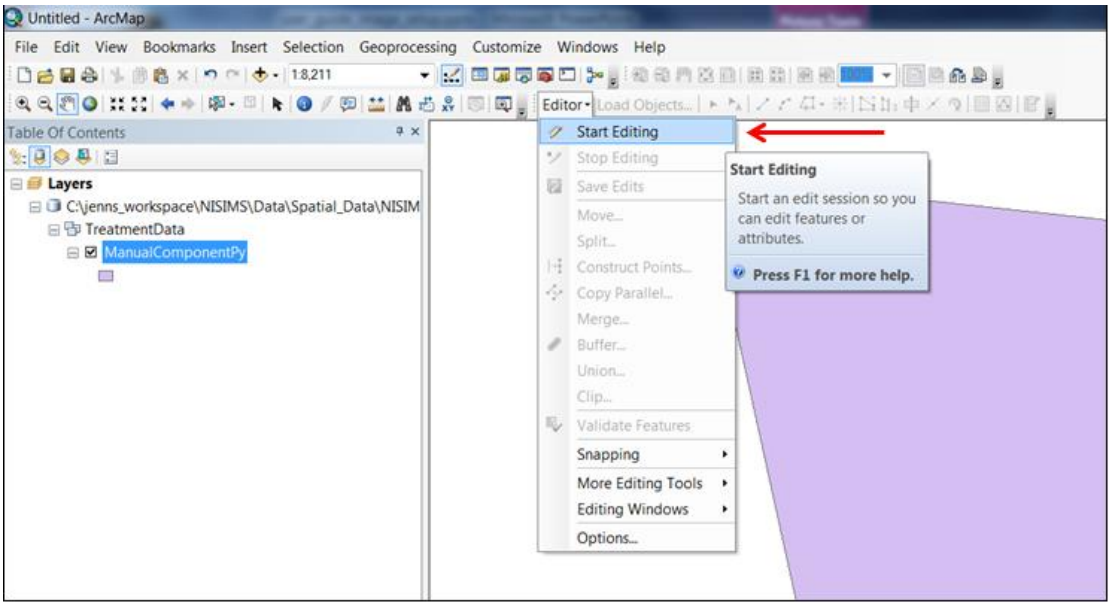
Instructions: Add features for two invasive plants that were both manually treated at the same time and location.

Step 1. Open ArcMap

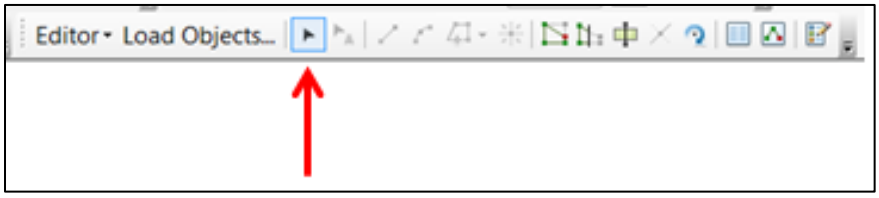
Step 2. Add the ManualComponentPy feature class that contains the feature you wish to copy.



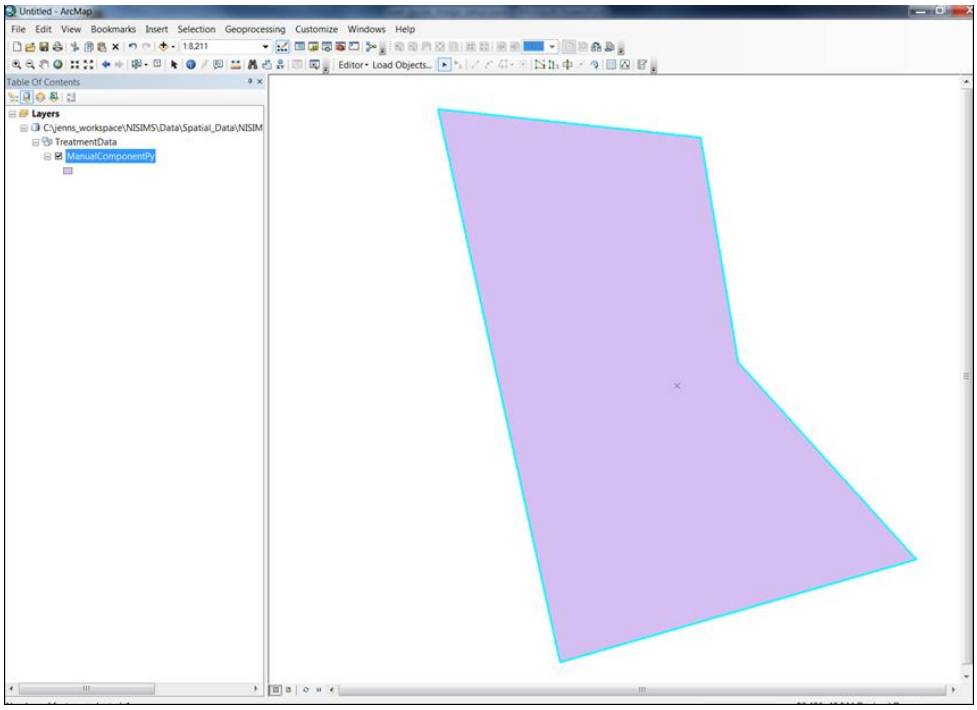
Step 3. Add the Editor Toolbar to ArcMap and start an edit session. Add the Editor Toolbar by clicking the Editor Toolbar button on the Standard Toolbar. The Editor Toolbar may be docked by dragging it to a location and dropping it until it snaps into place. Start an edit session by clicking on the Editor Menu on the Editor Toolbar and selecting Start Editing.



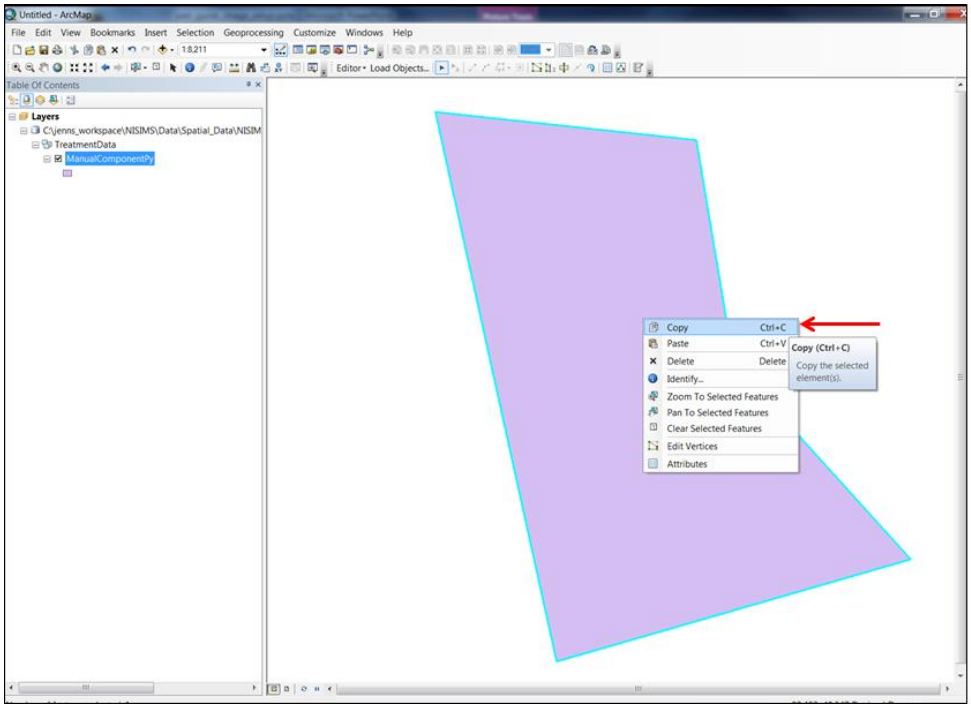
Step 4. Click on the Edit Tool button.



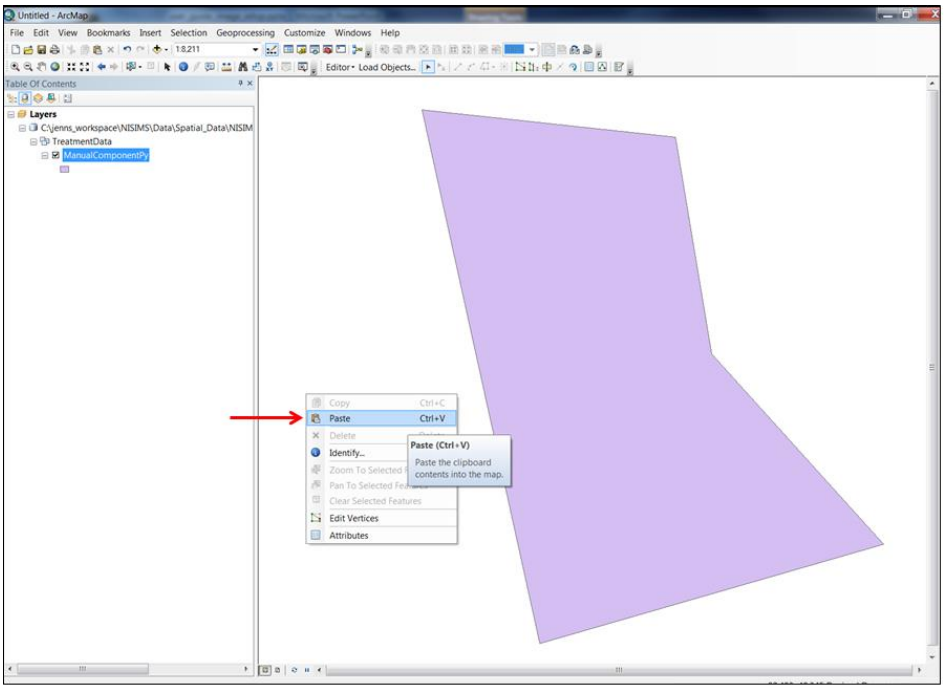
Step 5. Locate the feature that you wish to copy and click on it. Once selected, the outline of the feature should turn blue.



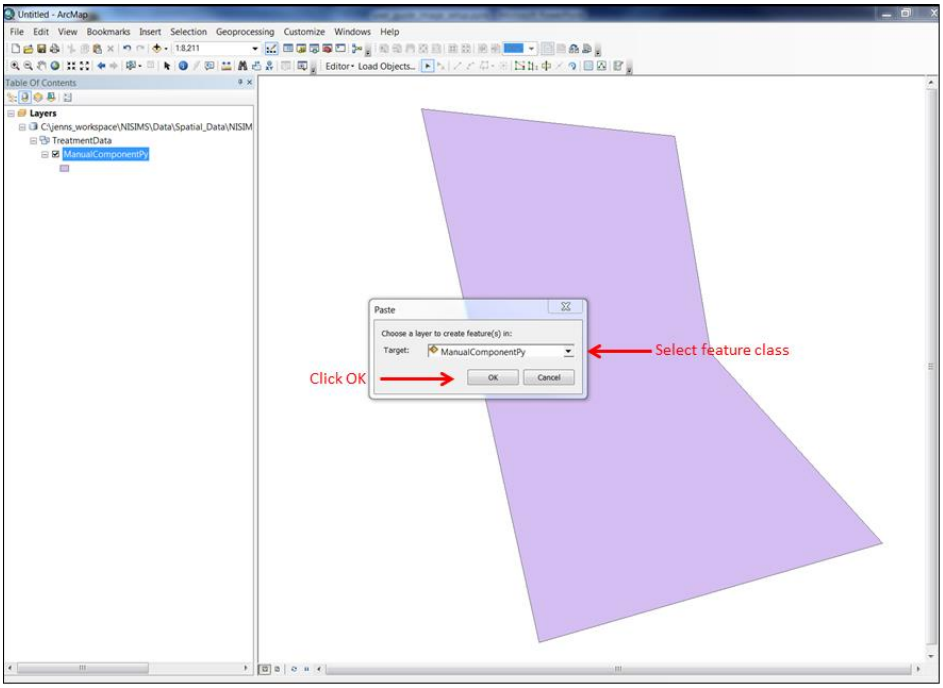
Step 6. Right click on the selected feature and select Copy.



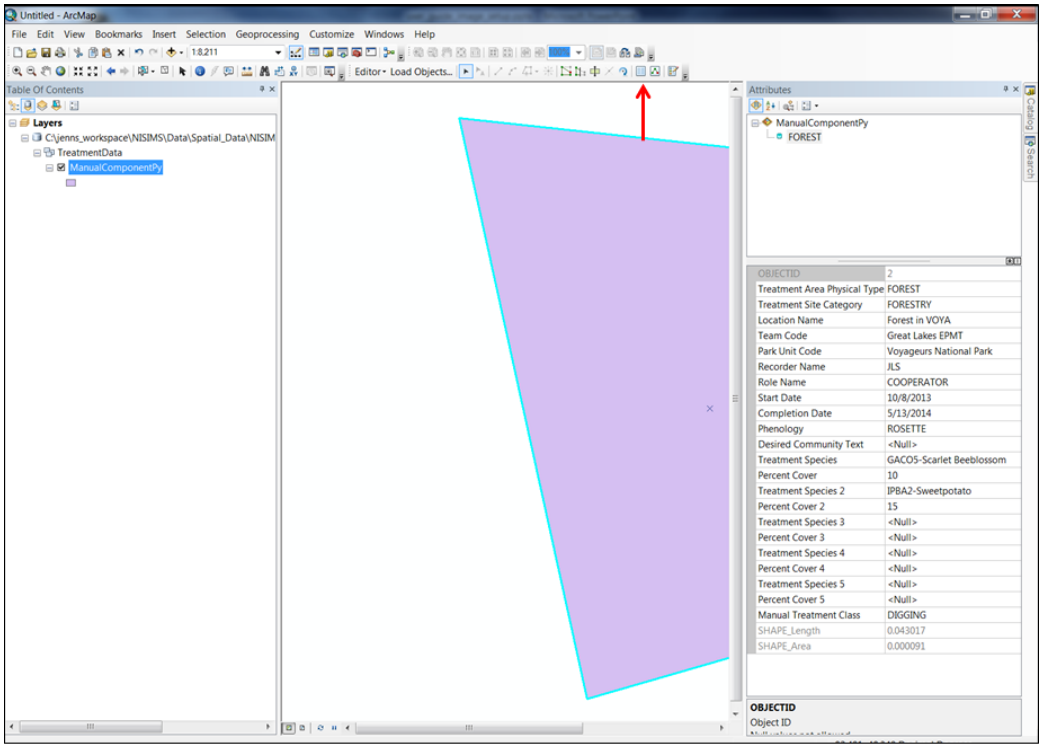
Step 7. Deselect the feature you just copied by left clicking in white space within the display window. Then, right click in the white space of the display window and select paste.



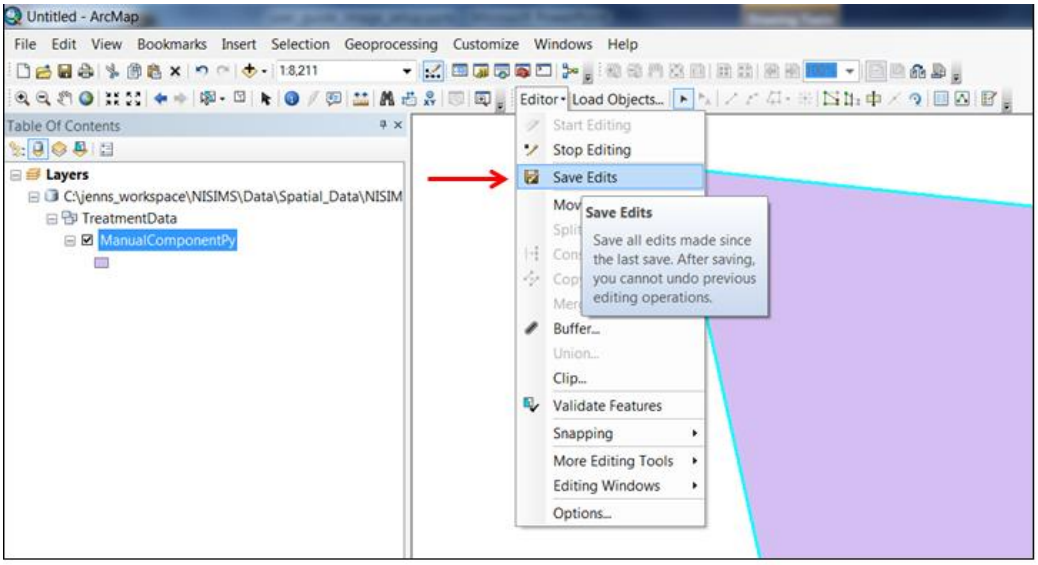
Step 8. The paste window will pop up. Select the feature class to which you wish to add the feature (ManualComponentPy in this example) and click OK. The new feature will be added to the feature class and will be selected automatically.



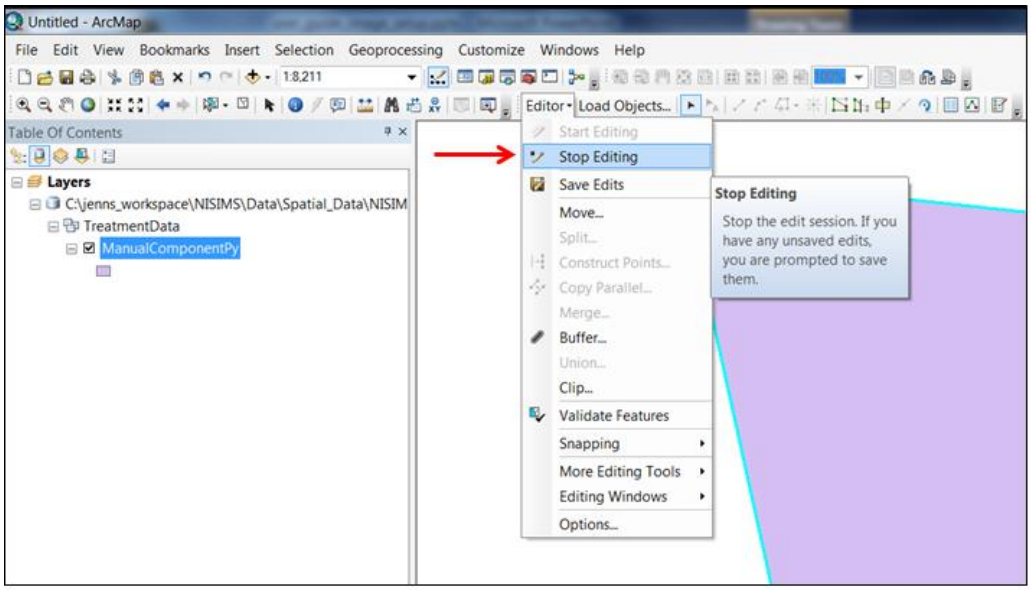
Step 9. With the new feature still selected, click the Attributes button on the Editor Toolbar. A window will open to the right that will allow you to change the appropriate fields. Click each field to change values as needed.



Step 10. Select Save Edits from the Editor menu on the Editor Toolbar.



Step 11. Select Stop Editing from the Editor menu on the Editor Toolbar when done.



3. NISIMS Data Dictionary

3.1 General Instructions

Users are encouraged to collect data using any method or technology that is most efficient for them. For those who would prefer to use a tool that has been created specifically for use with NISIMS, we have created a data dictionary that may be used with Trimble®'s TerraSync™. The data dictionary uses the same naming convention for its fields as the field geodatabase with the exception of a feature type prefix (e.g. lnTEAM, pySCNTFC_CD, etc.). The same definitions for the fields as described for the field geodatabase apply (see the NISIMS Fields and Domains Guide). The data dictionary may be downloaded from the Data Store (https://irma.nps.gov/App/Reference/Profile/2222335), and may be edited to better meet the needs of each user. If used in its original format (exclusive of changes described in the instructions below), output files may be exported to a file geodatabase and uploaded to NISIMS as is. Details of what is contained in each field are described in the NISIMS Fields and Domains Guide. The fields found within the NISIMS Data Dictionary are listed in Appendix B.

In order to ensure that data from the data dictionary is successfully uploaded to the SDE geodatabase, some general instructions are provided:

- All underlined data dictionary attributes are required.
- If you are going to make any edits to the data in ArcGIS prior to uploading to NISIMS, export the data as a file geodatabase. The instructions are provided in a following section. Otherwise, you may upload the GPS file (i.e., .cor or .ssf).
- You may export the data in any geographic coordinate system/projection you prefer; however, instructions have been provided for export in NAD 83.
- You may delete any feature classes you are not using from the exported file geodatabase.
- Do not rename the exported feature classes that you are using.
- You may remove fields that you do not use from the data dictionary, so long as they are not required and are not used as a condition for another field. If you are having difficulty in determining whether you may remove a field, contact the WASO data manager.
- Please select menu values from the NISIMS Fields and Domains Guide (Appendix D). If you wish to add a value to any of the domains in the data dictionary, please contact the WASO data manager.
- If you need help modifying the data dictionary for your team, contact the WASO data manager.

3.2 Preparing and Uploading the Data Dictionary

The data dictionary was created using Trimble®'s GPS Pathfinder® Office. It can be edited using the Data Dictionary Editor and requires TerraSync to collect data. It is currently in a generic format with some fields not yet populated with menu attribute values. These menu attribute values allow users to select specific values from a drop-down menu while collecting data in the field. Fields with menu attribute values that need to be populated prior to use are as follows:

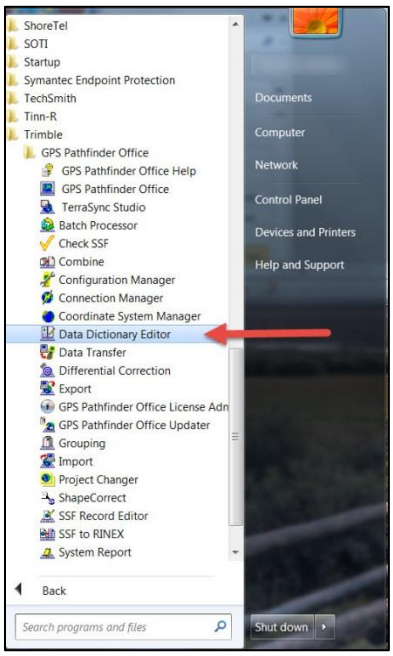
- TEAM
- PARK_UNIT
- SCNTFC_NM (including all fields followed by a number)
- BIO_SCNTFC_NM
- TRADE_NM (including all fields followed by a number)
- ADJ_TRADE_NM (including all fields followed by a number)
- RVG_SCNTFC_NM

These fields will have to be edited for all feature types (point, line, and polygon). Fields within each feature type begin with a prefix (e.g. ptTEAM, lnTEAM, pyTEAM).

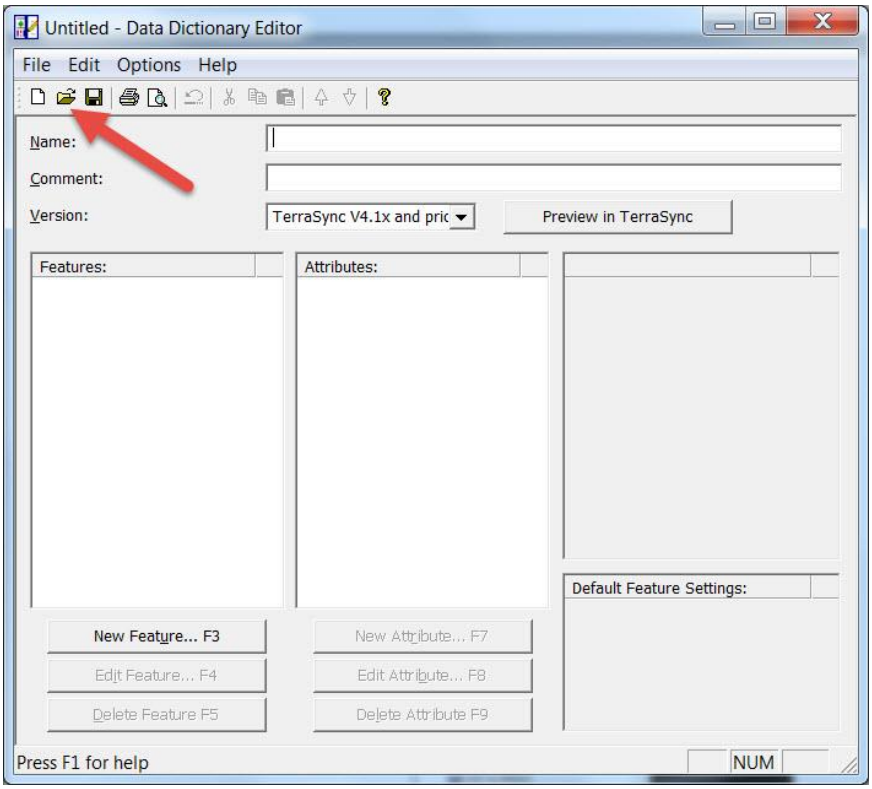
Instructions: Prepare the data dictionary for field collection and upload it to the GPS unit.

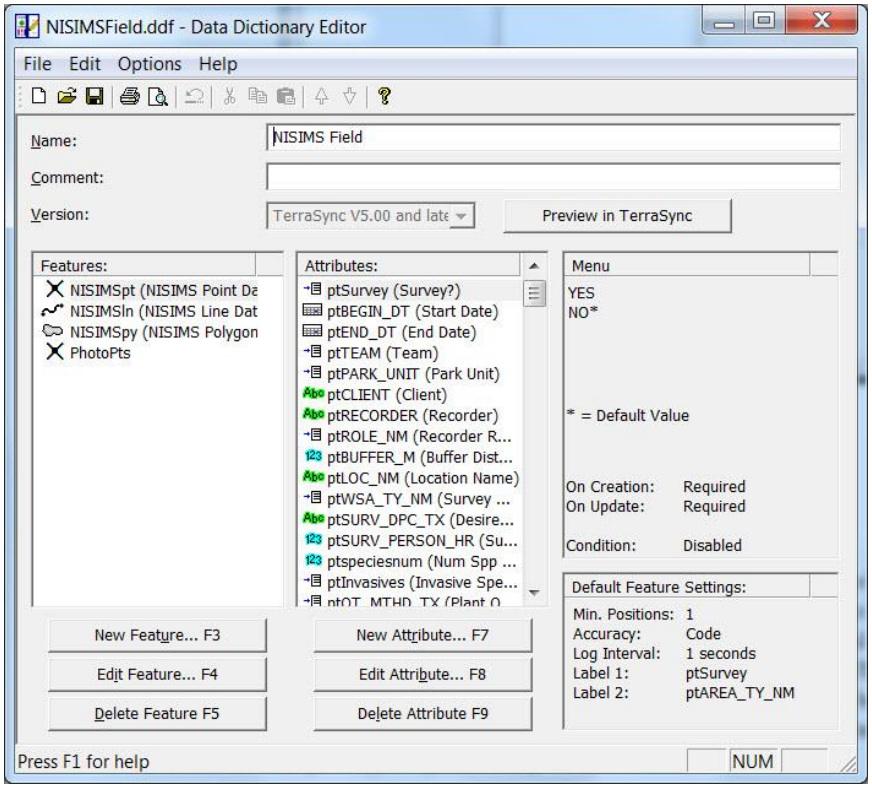
Step 1. Download the data dictionary to a location of your choice (https://irma.nps.gov/App/Reference/Profile/2222335).

Step 2. Open "Trimble>GPS Pathfinder Office>Data Dictionary Editor" from the "Start Menu".

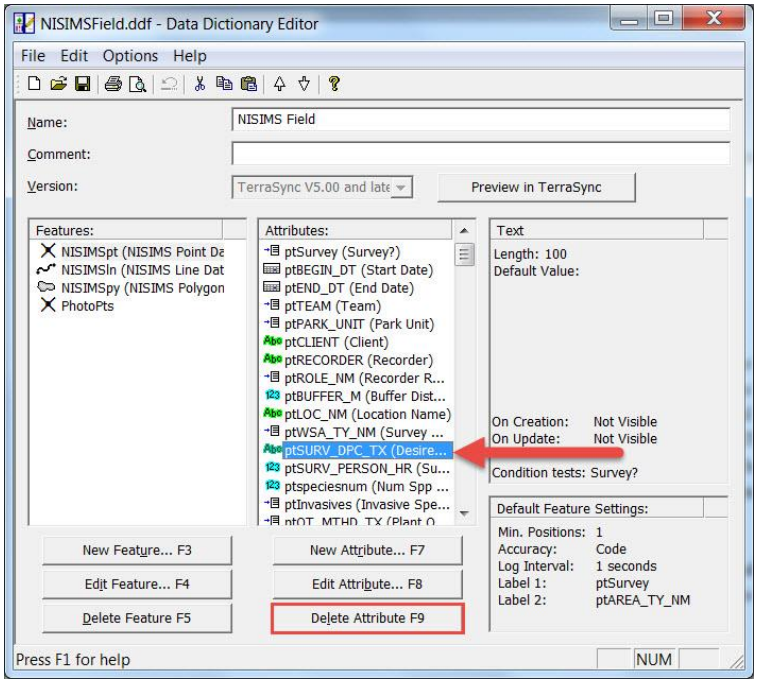


Step 3. Click the “Open” button and navigate to the data dictionary.

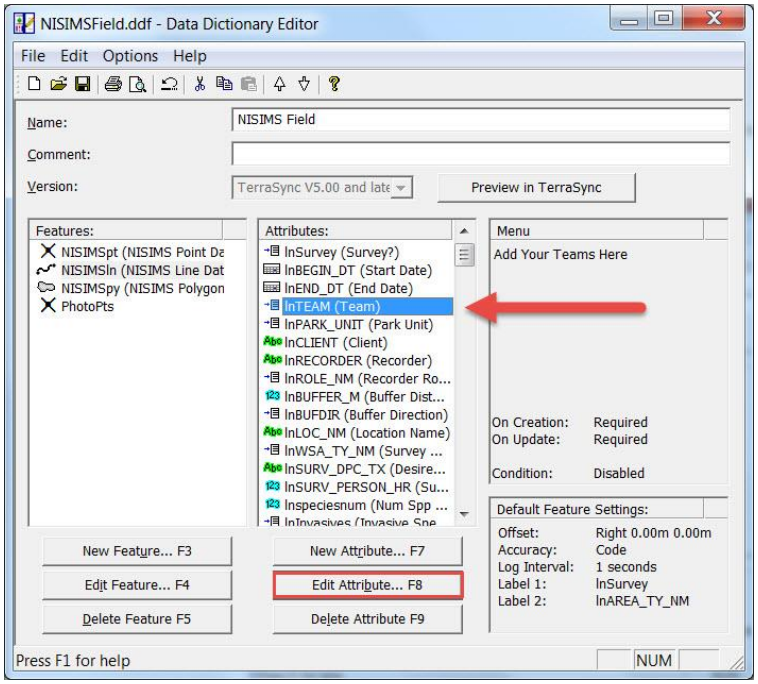




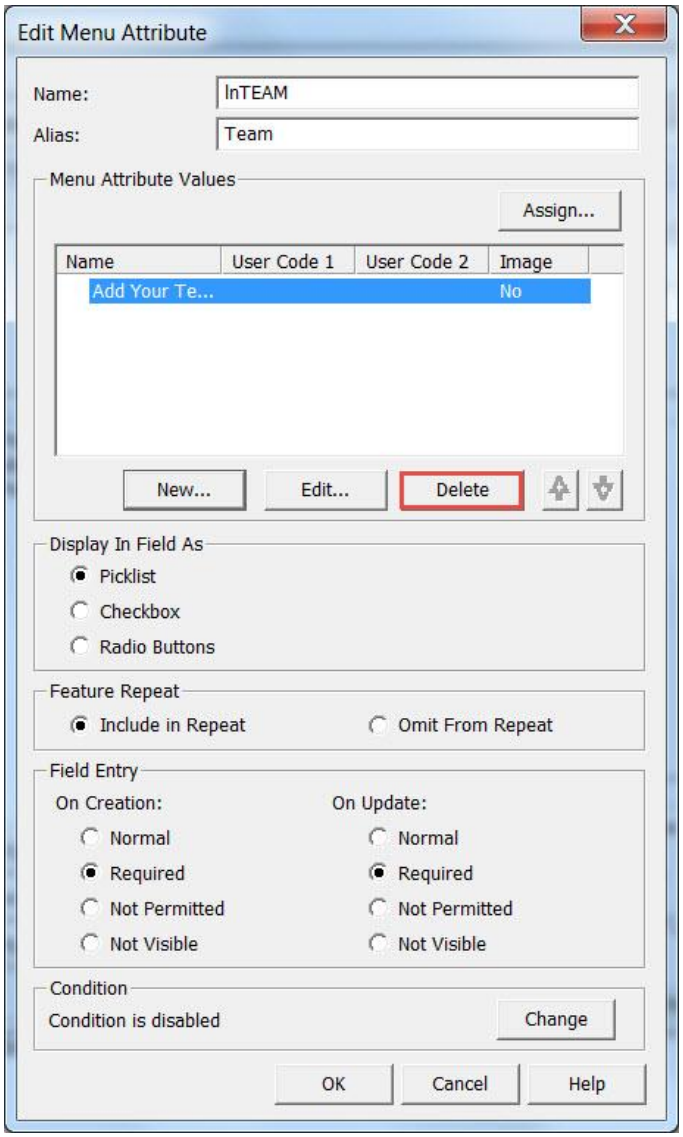
Step 4. Delete fields that you do not plan to use in the field by selecting a field under the “Attributes” box and clicking the “Delete Attribute F9” button. Do not delete required fields or fields used as a condition for another field.



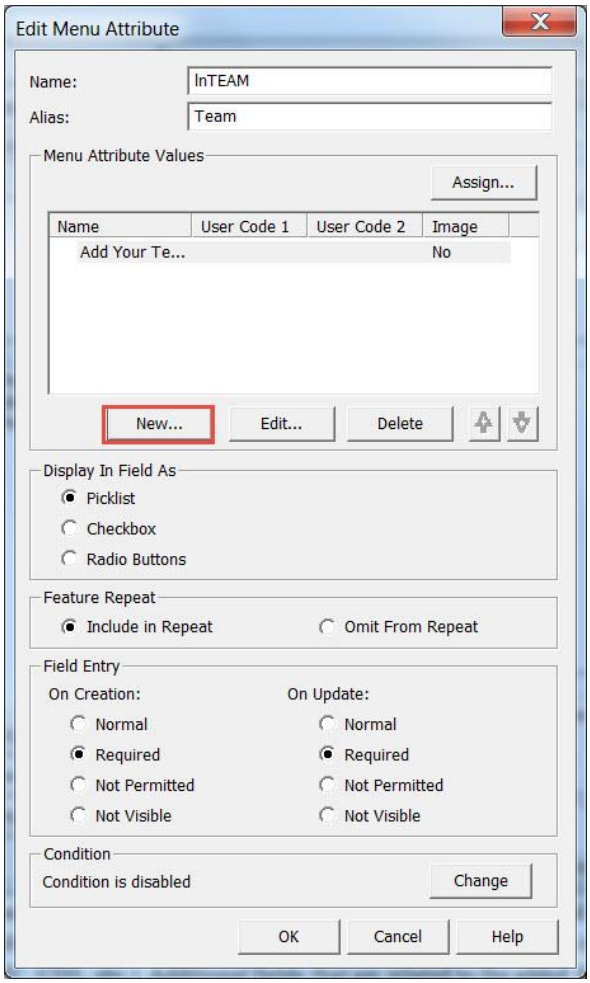
Step 5. To add menu attribute values to a field, select the field and click the “Edit Attribute… F8” button.



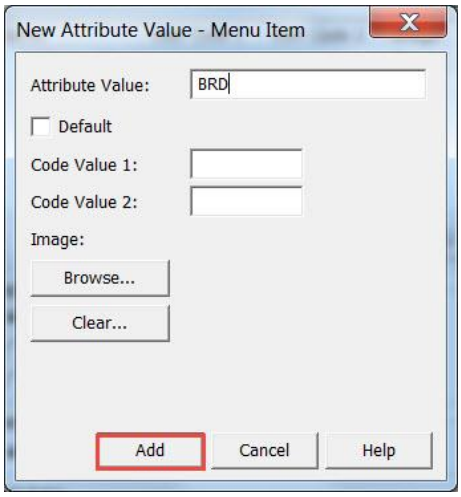
Under the “Menu Attribute Values” box in the “Edit Menu Attribute” window, select the generic attribute value that begins with “Add your…”, and delete it.



To add one attribute value at a time, click the “New…” button.



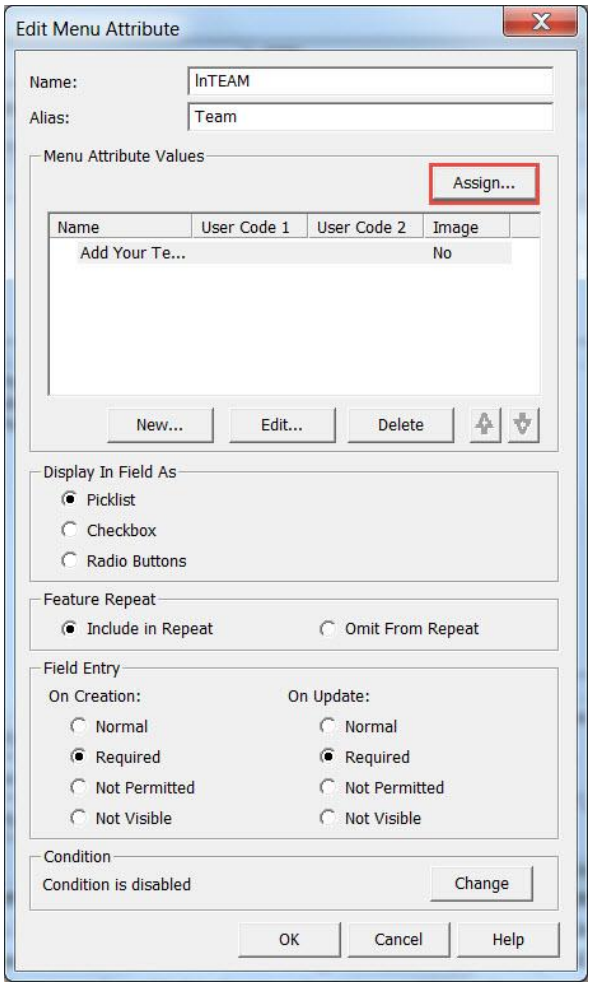
Add the name of your attribute value in the “Attribute Value” box, and click the “Add” button.



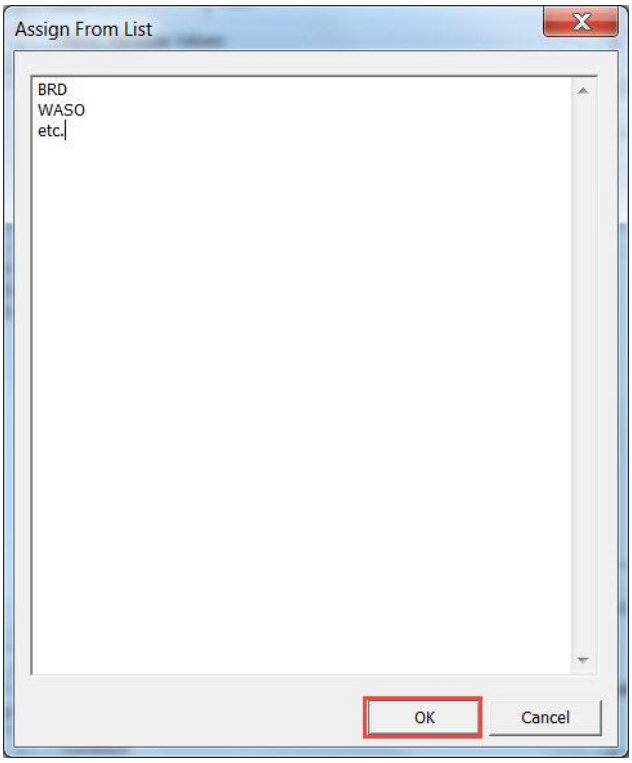
Repeat until all attribute values have been added.

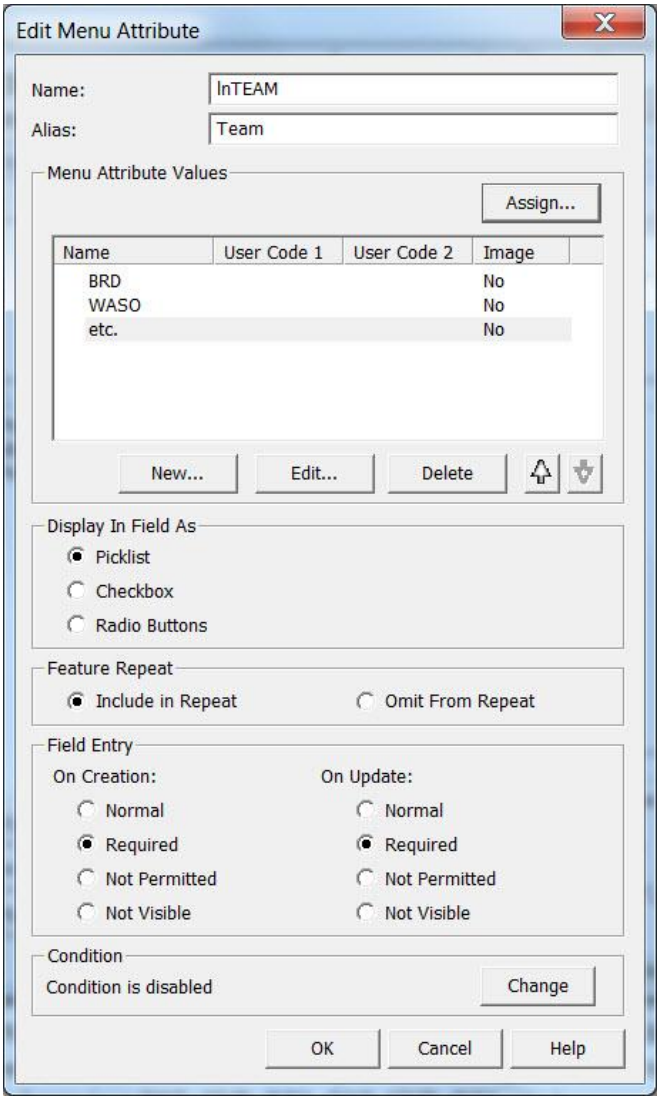
- OR -

Add multiple attribute values at once by clicking the “Assign…” button in the “Menu Attribute Values” box.



Add the list of values in the box that opens. You may copy and paste long lists in order to prevent from typing them for each field. Click OK when done.





Repeat for all fields requiring user-specific menu attribute values:

- TEAM
- PARK_UNIT
- SCNTFC_NM (including all fields followed by a number)
- BIO_SCNTFC_NM
- TRADE_NM (including all fields followed by a number)
- ADJ_TRADE_NM (including all fields followed by a number)
- RVG_SCNTFC_NM

All species names must be spelled exactly as found in the NISIMS Species Lists. The most recent species lists can be found at the Data Store:

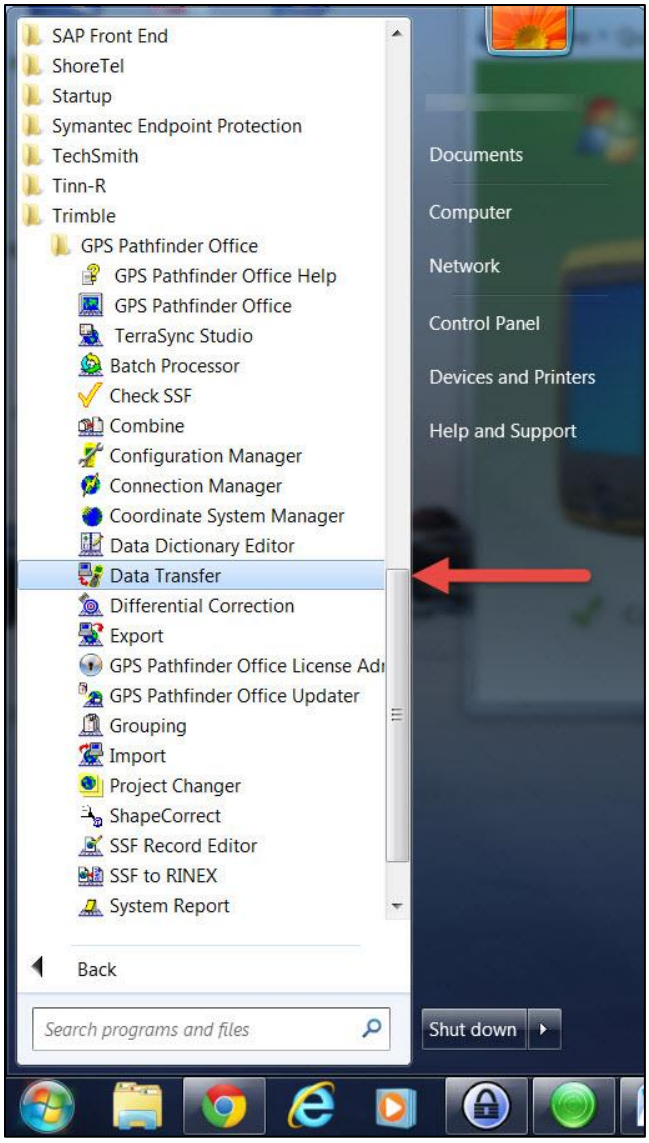
- NISIMS Invasive Plant Species List (to be used with SCNTFC_NM fields): https://irma.nps.gov/App/Reference/Profile/2222379
- NISIMS Biological Control Agents Species List (to be used with BIO_SCNTFC_NM fields): https://irma.nps.gov/App/Reference/Profile/2222380
- NISIMS Revegetation Species List (to be used with RVG_SCNTFC_NM fields): https://irma.nps.gov/App/Reference/Profile/2222381).

If you need a species to be added to the species list, please inform the WASO Data Manager either prior to or upon uploading your data to NISIMS.

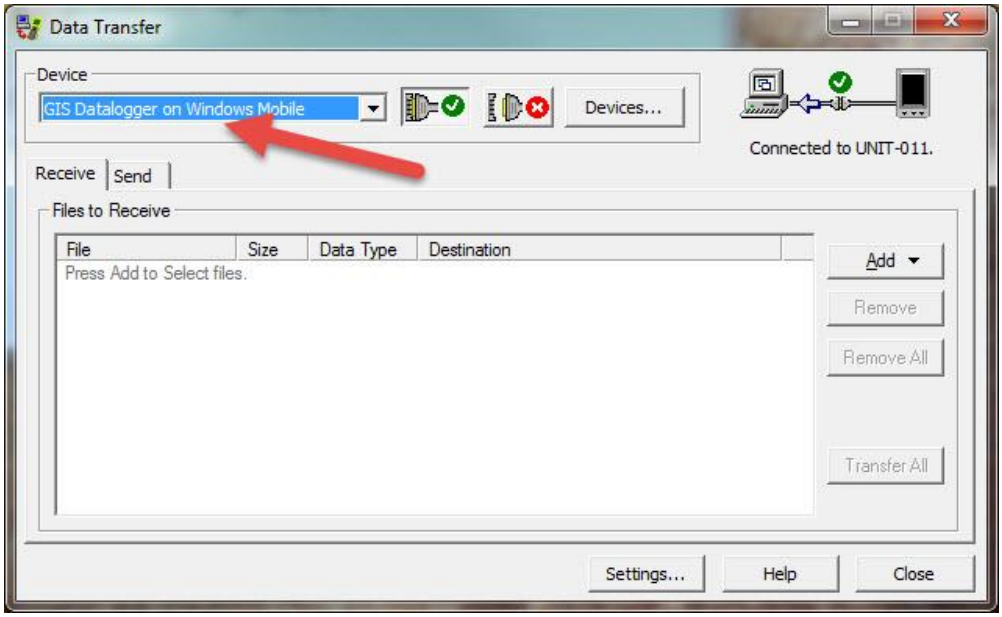
Step 6. Save the data dictionary and close the Data Dictionary Editor.

Step 7. Connect the GPS unit to the computer via a cradle or USB cord, and wait for it to connect (see GPS unit user guide to learn how to do this).

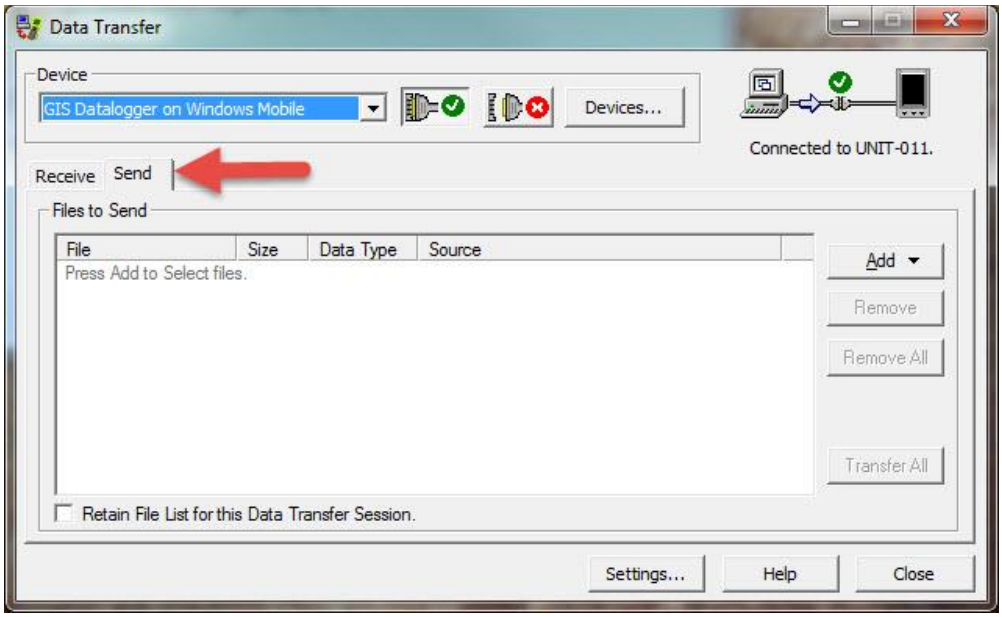
Step 8. Open the “Data Transfer” utility under “Trimble>GPS Pathfinder Office” on the “Start Menu”.



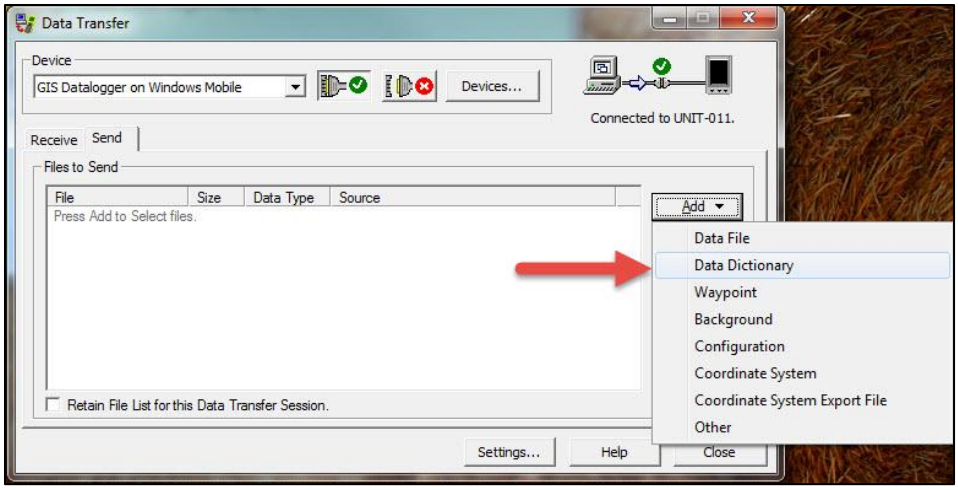
Step 9. Select the device to which you wish to upload the data dictionary in the “Device” box.



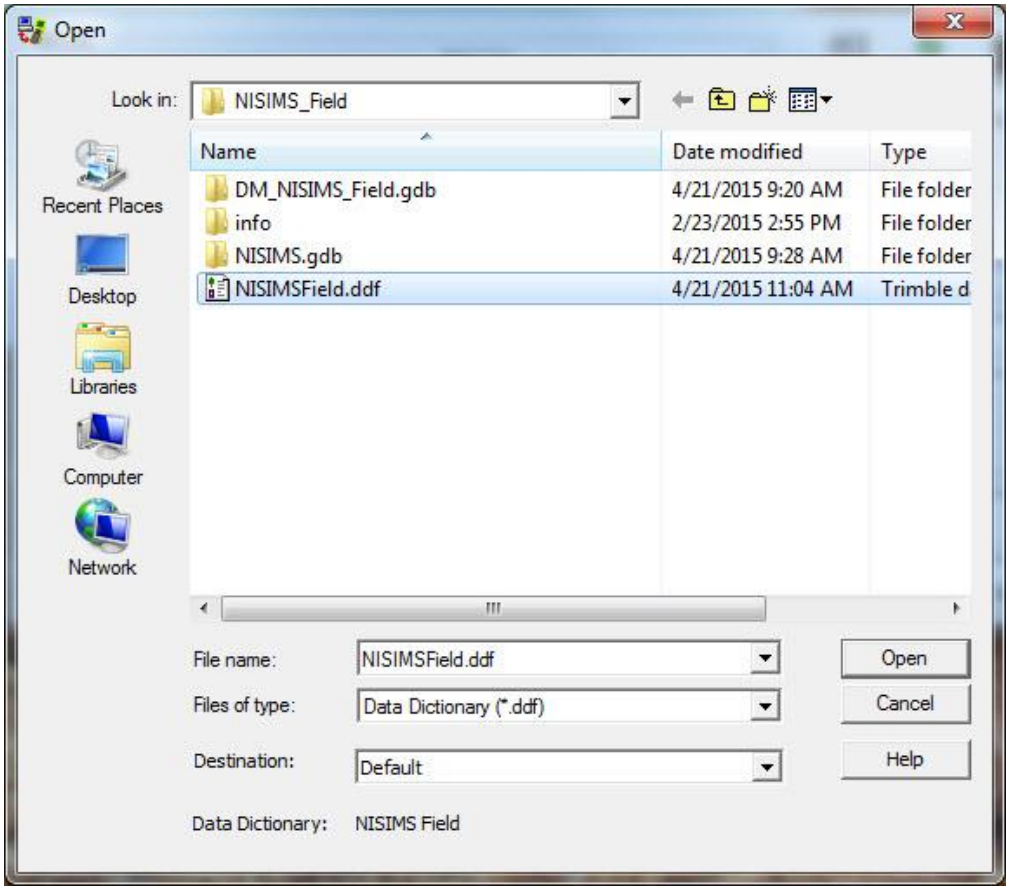
Step 10. Select the “Send” tab.



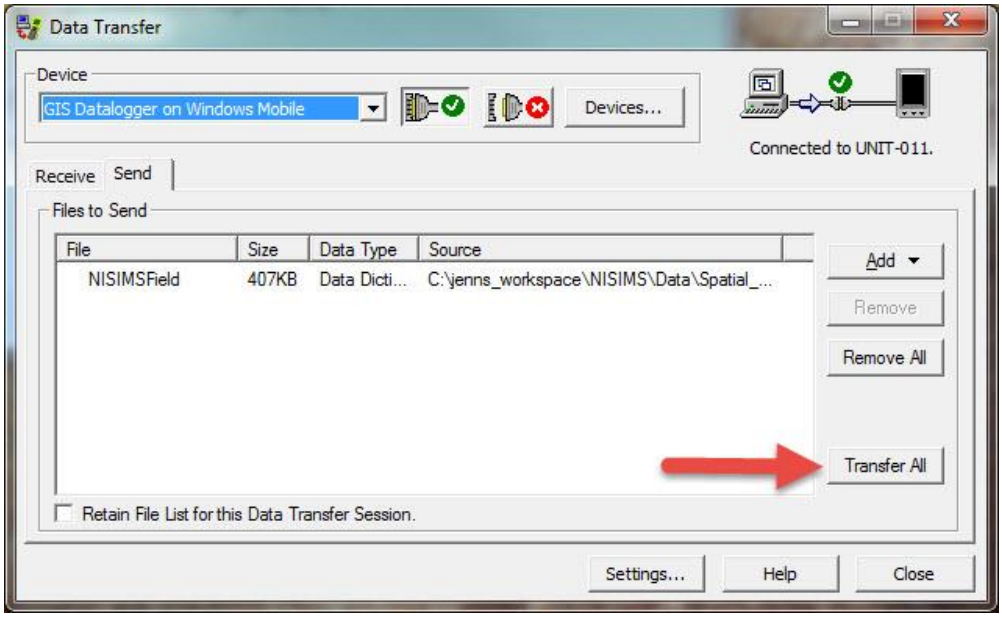
Step 11. Click the “Add” button and select “Data Dictionary” from the drop-down list.



Step 12. Browse to data dictionary in the window that opens and click “Open”.



Step 13. Transfer the data to the GPS unit by clicking the “Transfer All” button.



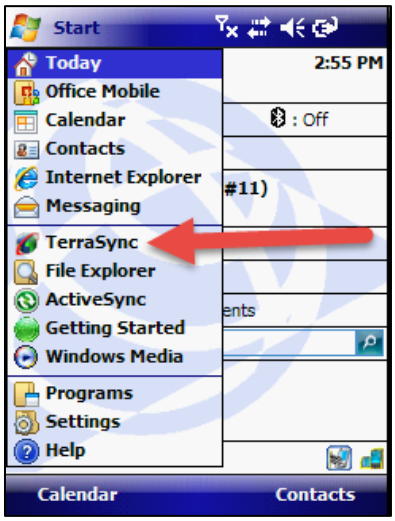
Click Close when the transfer is complete and close the “Data Transfer” utility.

3.3 Collecting Data in the Field

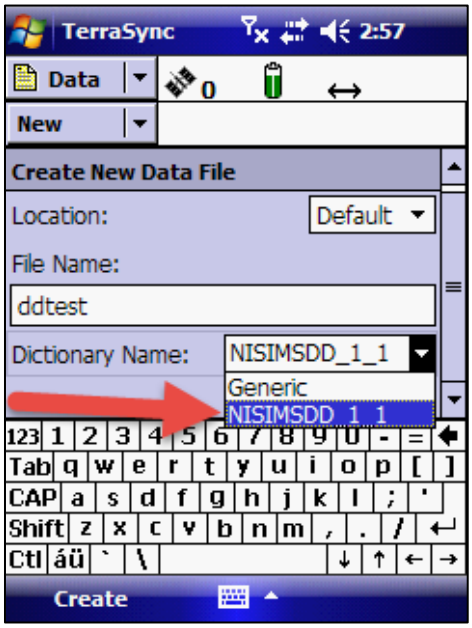
The data dictionary has been designed to collect Weed Survey, Weed Infestation, and Treatment data for NISIMS. Proposed treatment data will need to be entered into the NISIMS Field Geodatabase in the office. Data may be collected as points, lines, or polygons. In order to use the data dictionary, you will need to have TerraSync™ installed on your GPS unit.

Instructions: Use the data dictionary to collect data in the field.

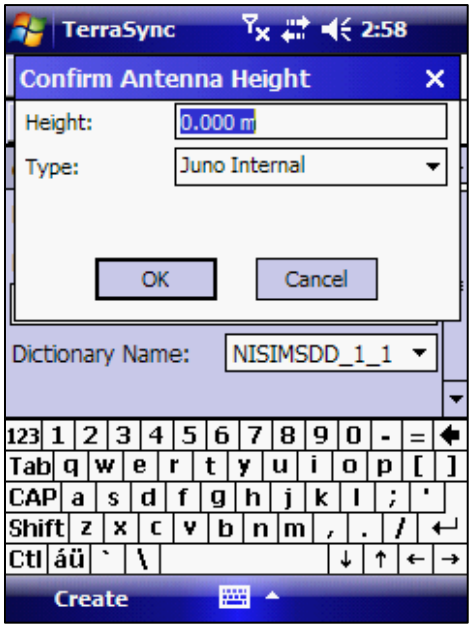
Step 1. From the Start Menu in the upper left-hand corner of the GPS unit, select “TerraSync”.



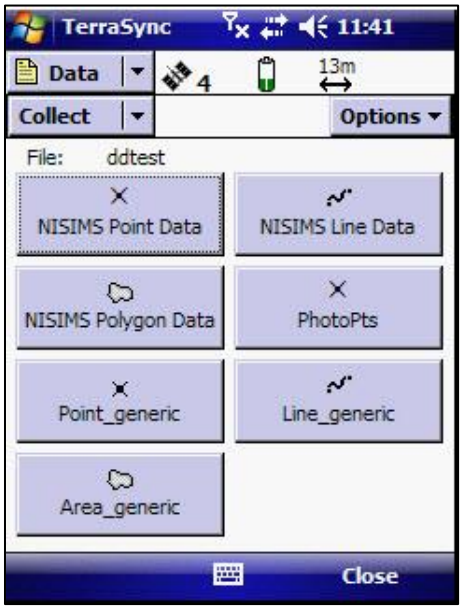
Step 2. Select Data from the top left drop-down menu. Give the file a name, and select the NISIMS data dictionary from the “Dictionary Name:” drop-down list. Click “Create”.



Step 3. Confirm antenna height in the window that opens. If you are using an external antenna, enter the antenna's height and select type of antenna. Click "OK".

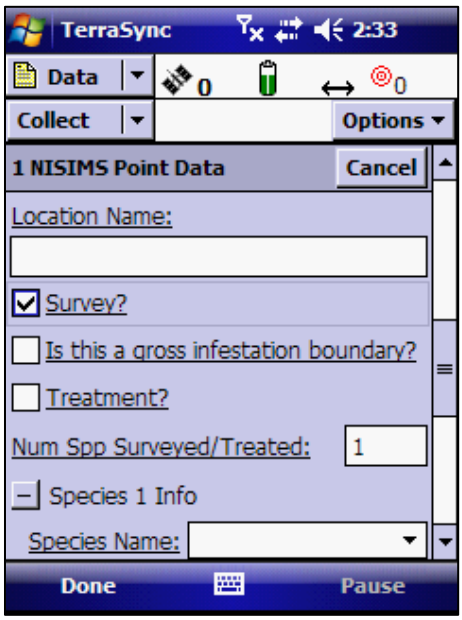


Step 4. Select feature type. NISIMS data will be collected with the "NISIMS Point Data", "NISIMS Line Data", "NISIMS Polygon Data", or "PhotoPts" features.

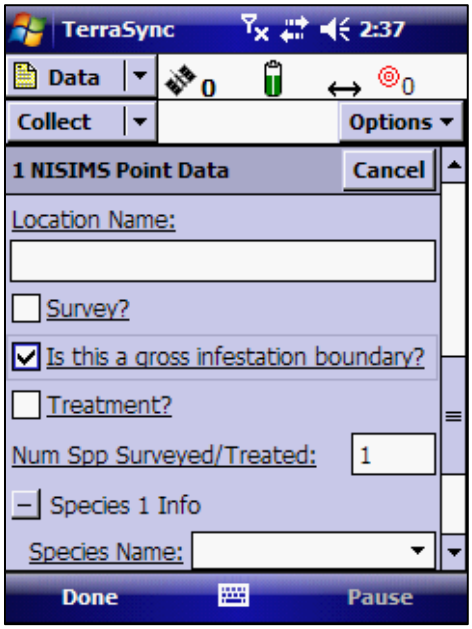


Step 5. Collect data. You may pause point collection from the Options menu in the upper right while entering attribute data. It may take a few seconds for fields to propagate upon clicking a check box. All underlined fields are required. You will not be able to save your location without completing all required fields.

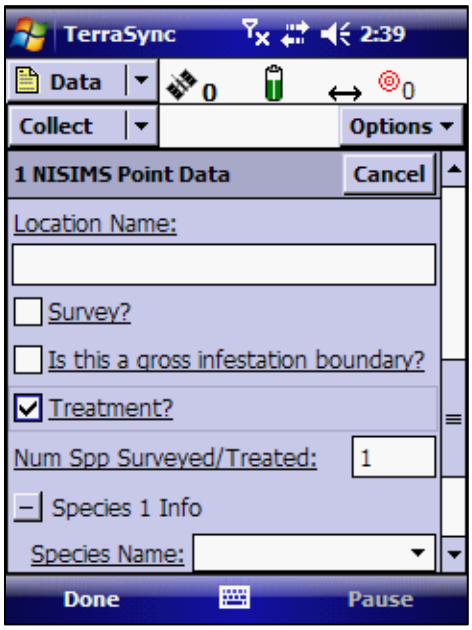
If you are monitoring or inventorying a location, check the box next to "Survey?". This will allow you to enter Weed Survey data.



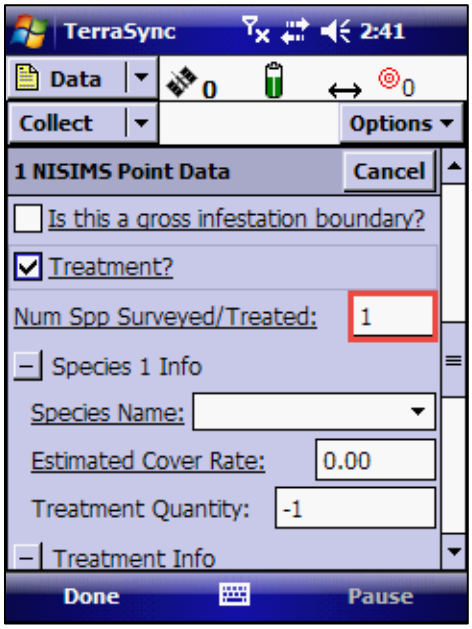
If you wish the data to be used to calculate gross and net infestation acreages, select the "Is this gross infestation data?" box. This box should only be selected if you intend to use this boundary as a measure of gross infestation. This will allow you to enter Weed Infestation data.



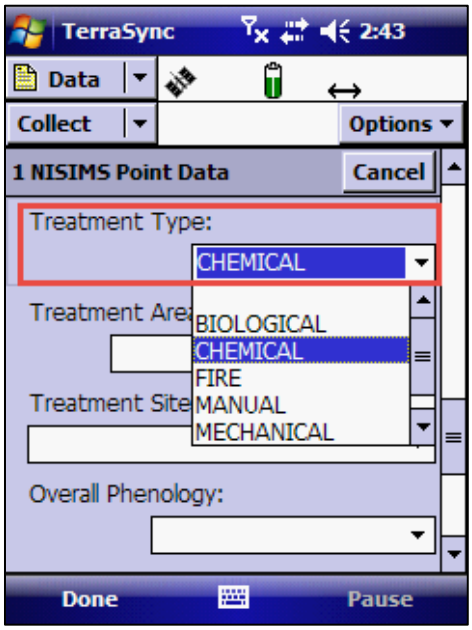
If you are treating a location, check the box next to "Treatment?".



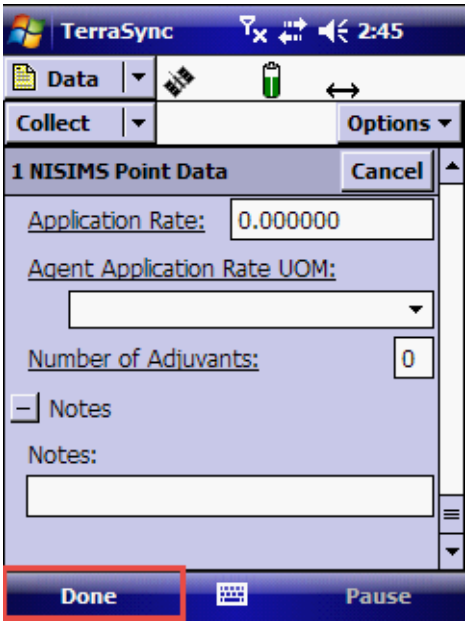
Enter the number of species for which you are searching or treating in the box next to “Num Spp Surveyed/Treated:”, even if the species are not present. This will allow you to enter data for multiple species that are linked to this feature.



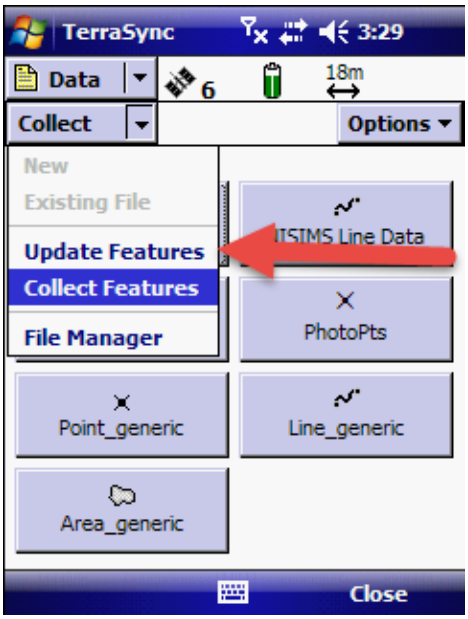
If you are treating a location, select the treatment type from the “Treatment Type” box.



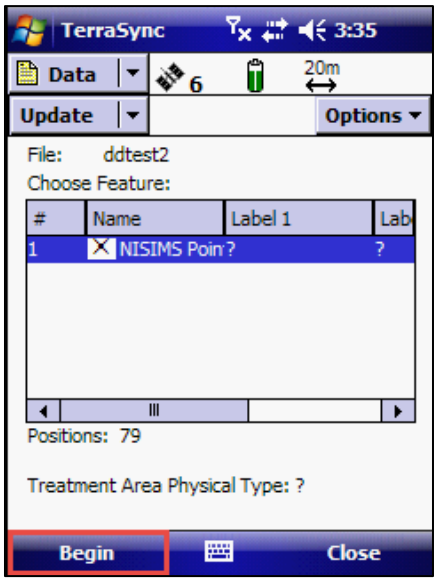
Step 5. Once all data have been entered, click “Done”.



Step 6. To update features, select “Update Features” from the lower left menu.



Select the feature that you wish to update and click “Begin”.



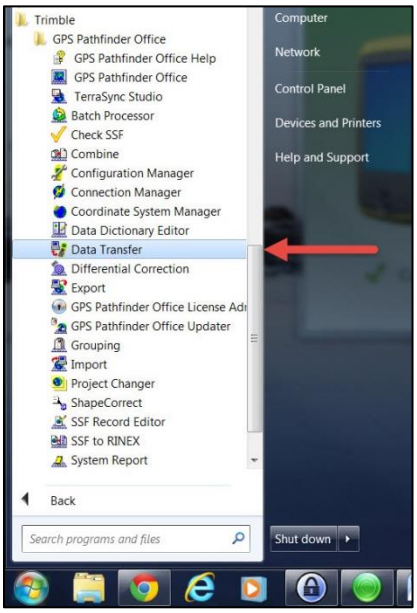
Make changes as needed, and click “Done” when completed.

3.4 Downloading Data from the GPS Unit

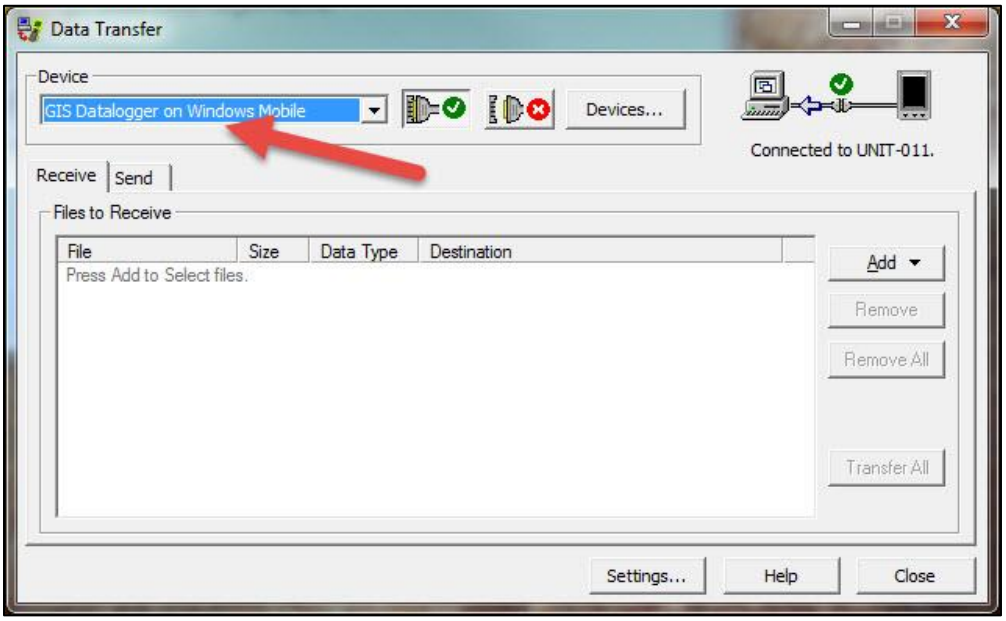
Once you are finished collecting data, download it from the GPS unit.

Instructions: Download data from your GPS unit.

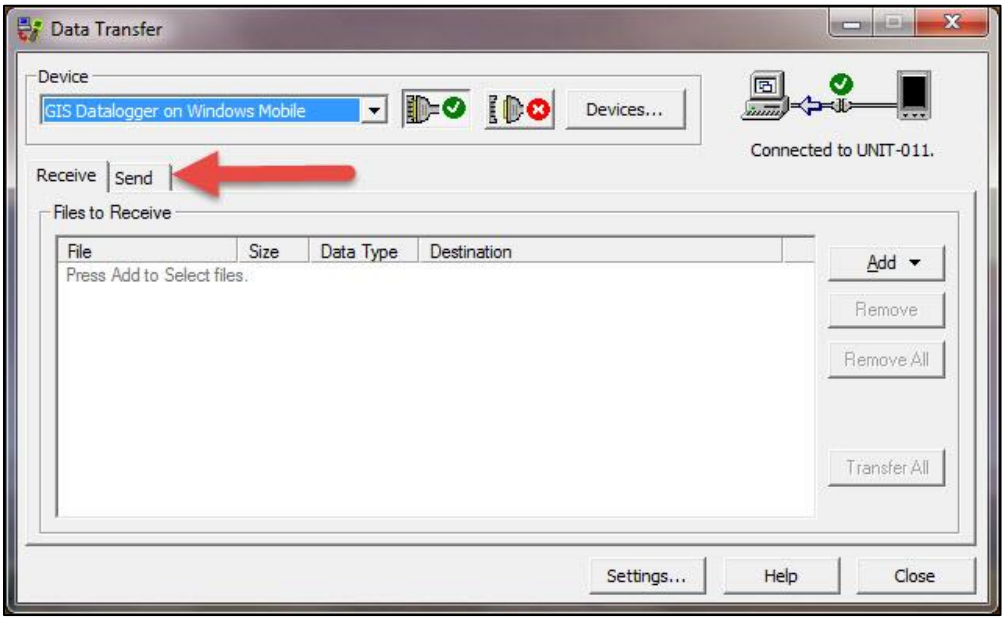
Step 1. Open the “Data Transfer” utility from “Trimble>GPS Pathfinder Office” on the “Start Menu”.



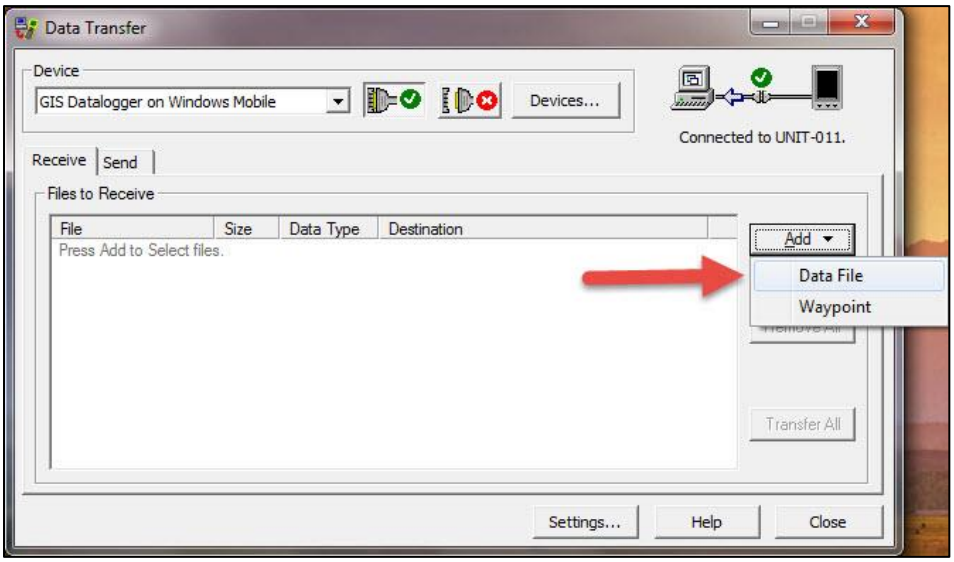
Step 2. Select the device from which you wish to download data.



Step 3. Make sure the "Receive" tab is selected.

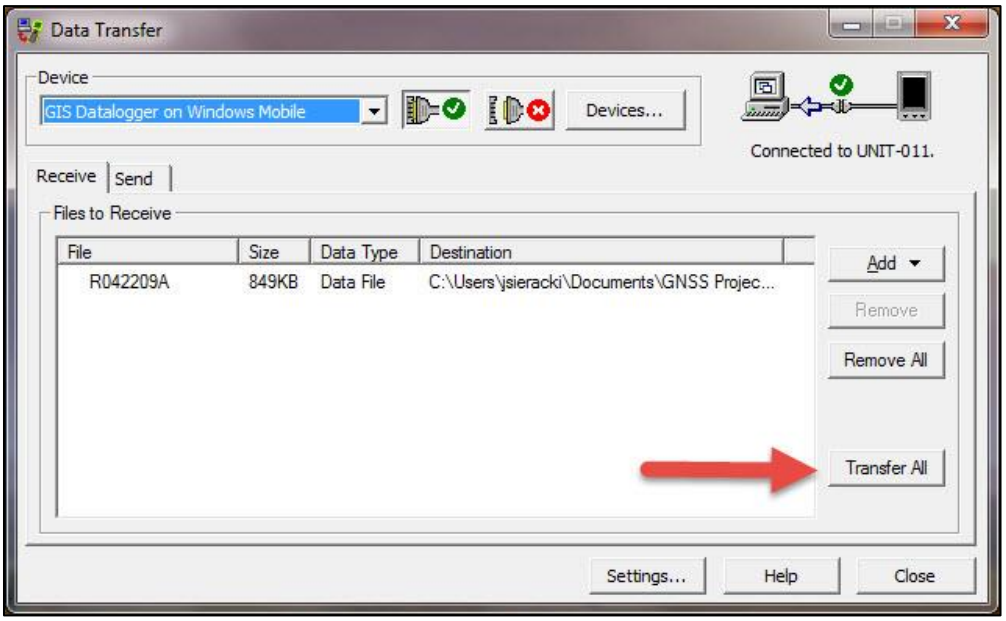


Step 4. Click the Add button and select Data File.



Browse to your Data File.

Step 5. Click Transfer All.



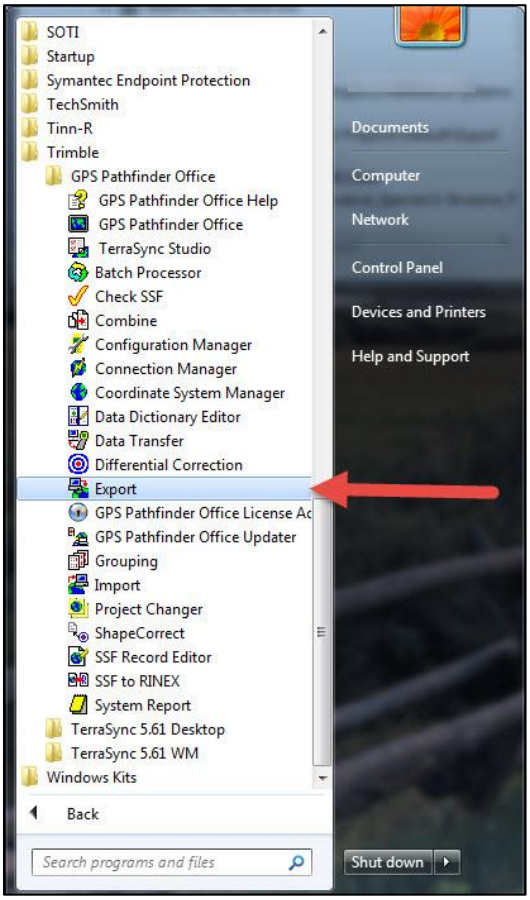
Click Close once the transfer is complete. The data may now be uploaded to NISIMS or exported to a file geodatabase.

3.5 Exporting GPS Data to a File Geodatabase

Once the data has been transferred from the GPS unit, you may export it to a file geodatabase.

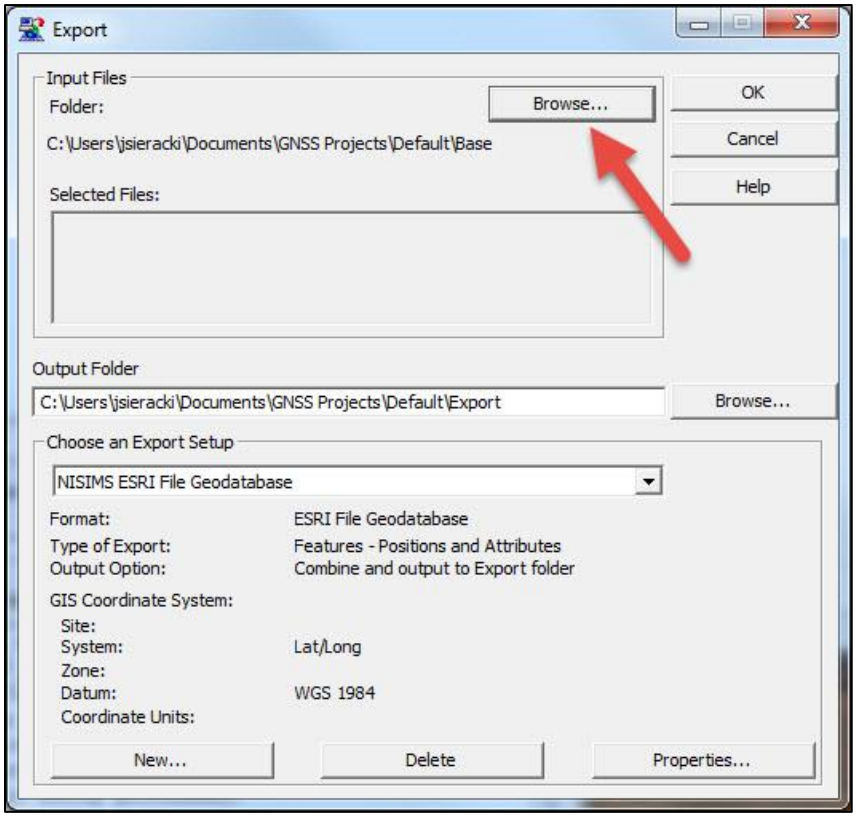
Instructions: Export GPS data to a file geodatabase.

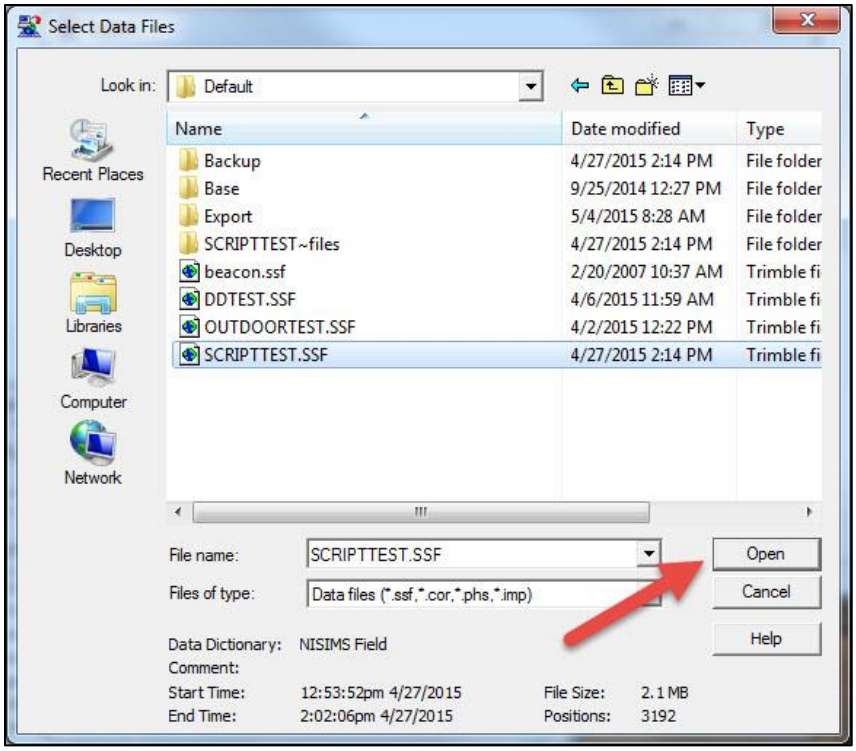
Step 1. Open the Export utility.



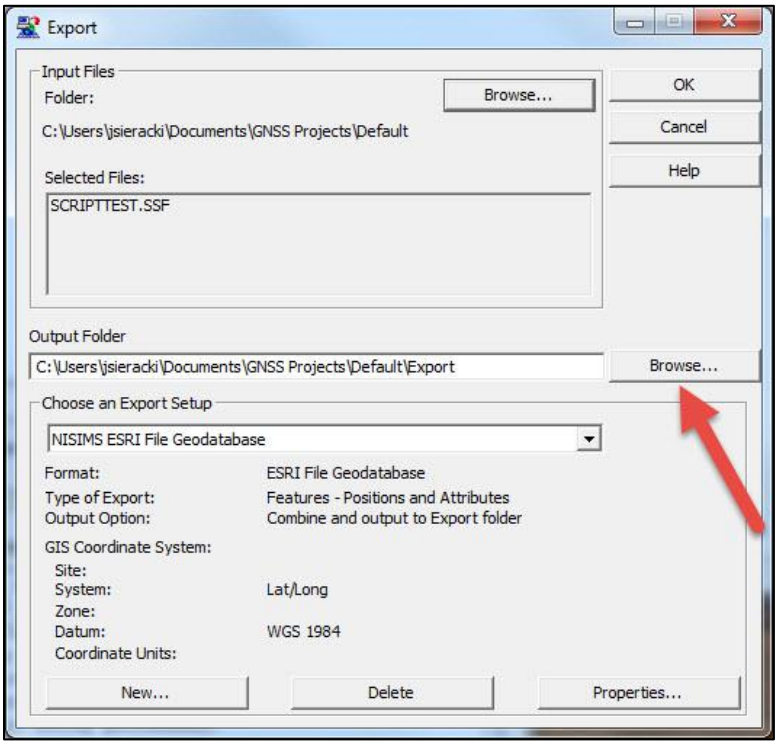
e

Step 2. Click the “Browse…” button in the “Input Files” box, and browse to the transferred GPS file and click Open.

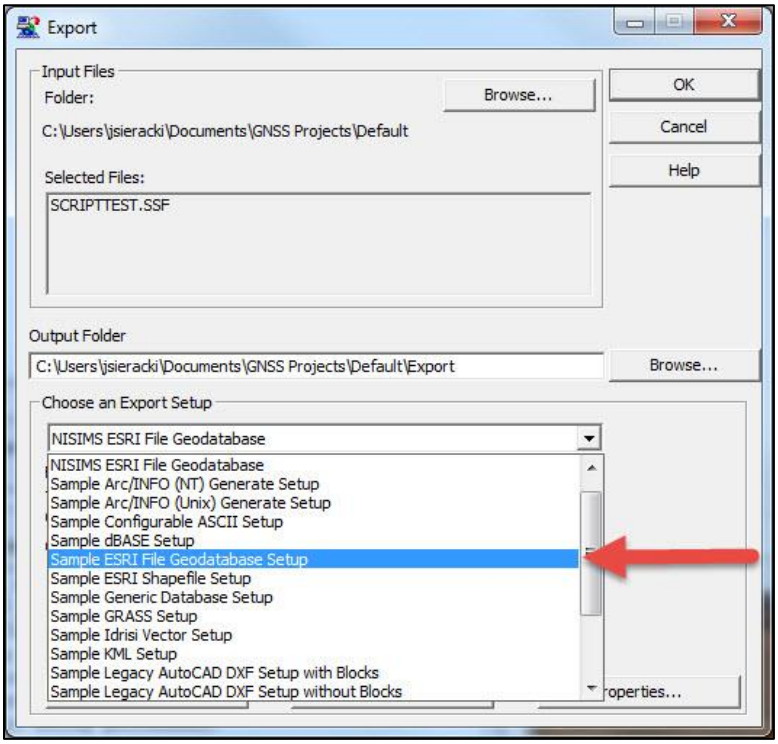




Step 3. Click the "Browse" button next to the "Output Folder" box, and browse to the output folder if different from the default.

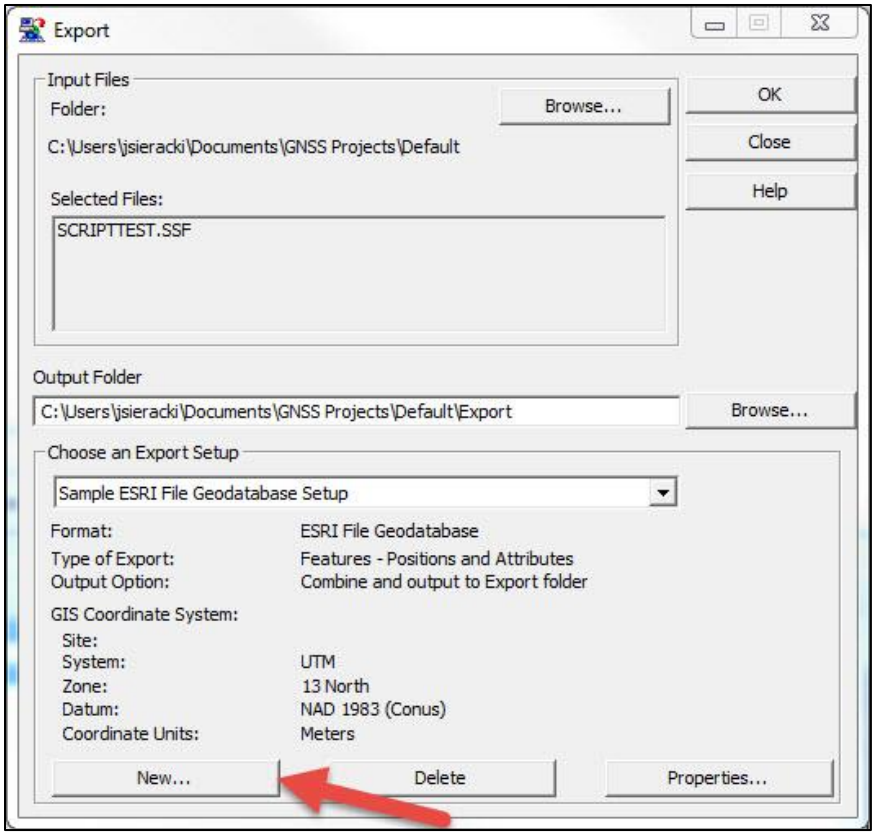


Step 4. Select "Sample ESRI File Geodatabase Setup" from the drop-down box in the "Choose an Export Setup" box.



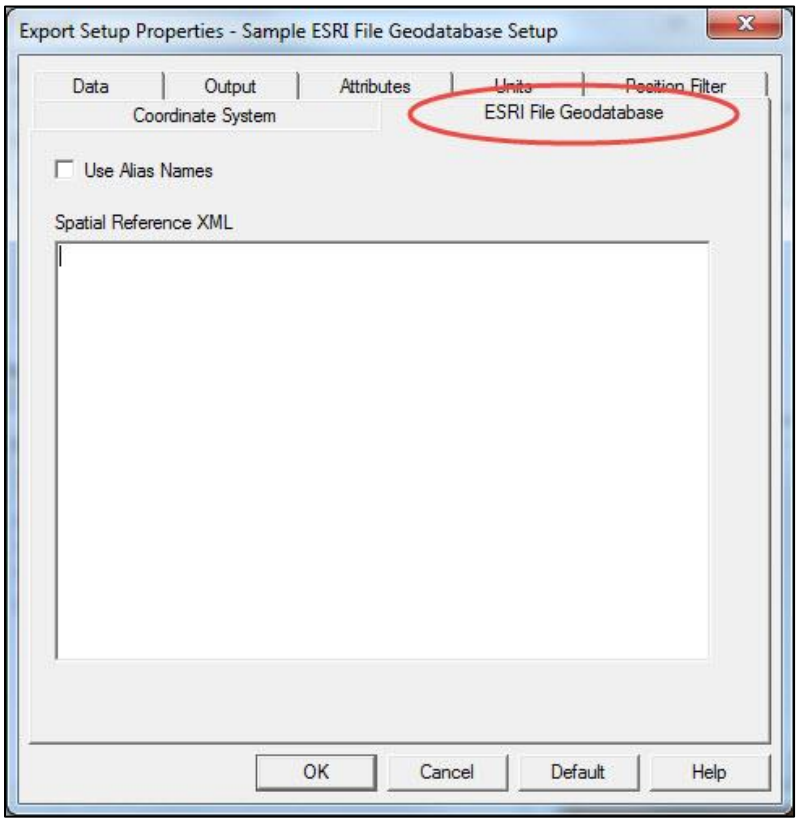
***Steps 5 through 8 will only have to be done once. Once you have completed these steps on your computer, you will be able to reselect this Setup from the drop-down menu.**

Step 5*. Click the “New…” button.



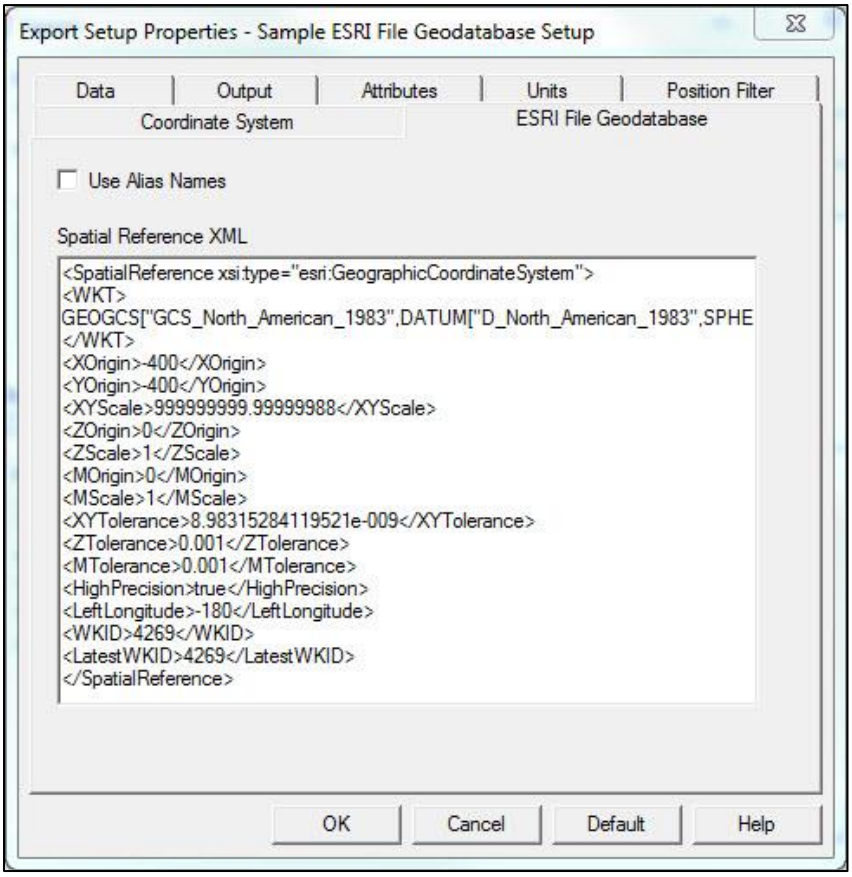
Step 6*. Type a name into the “Setup Name” box in the “New Setup” window and click “OK”. This will save your settings for future use.

Step 7*. In the window that opens, Select the “ESRI File Geodatabse” tab.

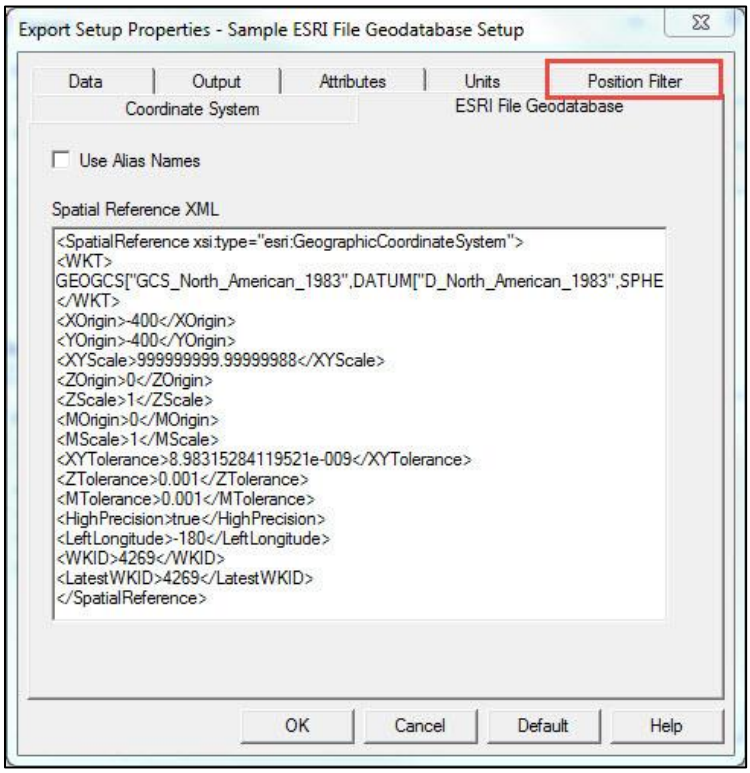


Copy and paste the following text into the “Spatial Reference XML” box.

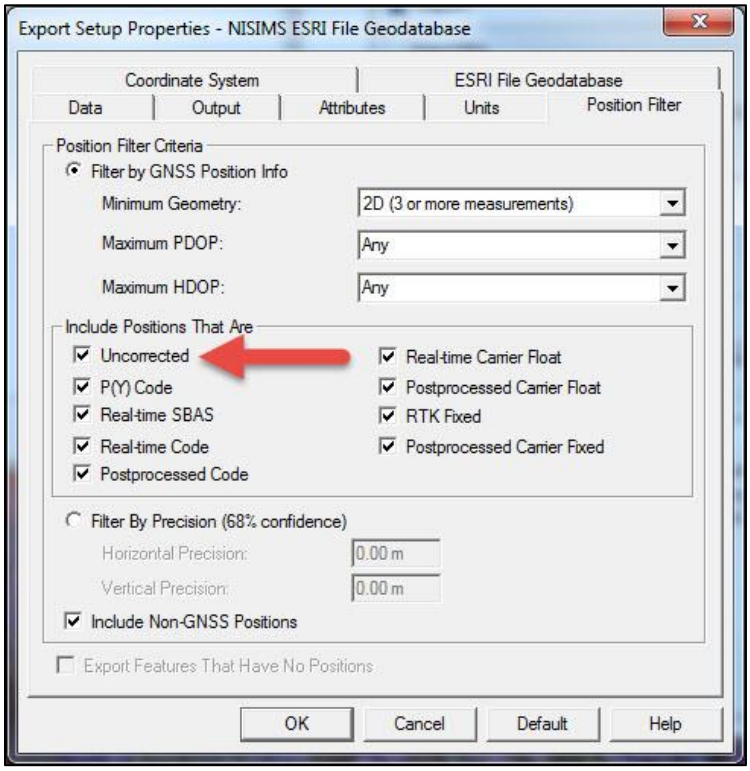

```
<SpatialReference xsi:type="esri:GeographicCoordinateSystem">
<WKT>
GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS
_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199
433],AUTHORITY["EPSG",4269]]
</WKT>
<XOrigin>-400</XOrigin>
<YOrigin>-400</YOrigin>
<XYScale>999999999.99999988</XYScale>
<ZOrigin>0</ZOrigin>
<ZScale>1</ZScale>
<MOrigin>0</MOrigin>
<MScale>1</MScale>
<XYTolerance>8.98315284119521e-009</XYTolerance>
<ZTolerance>0.001</ZTolerance>
<MTolerance>0.001</MTolerance>
<HighPrecision>true</HighPrecision>
<LeftLongitude>-180</LeftLongitude>
<WKID>4269</WKID>
</SpatialReference>
```

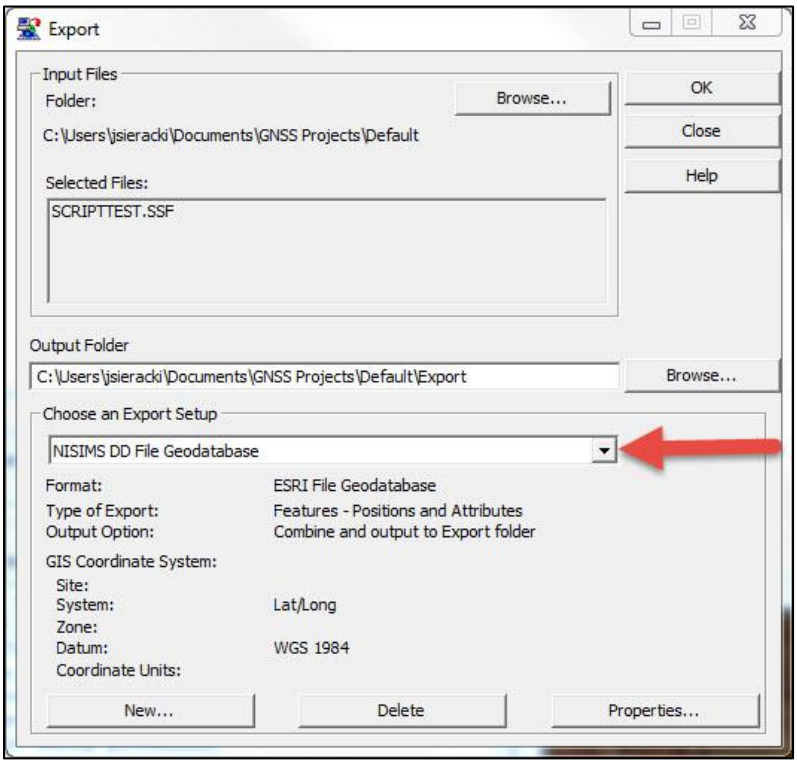
Step 8*. Select the “Position Filter Tab”.



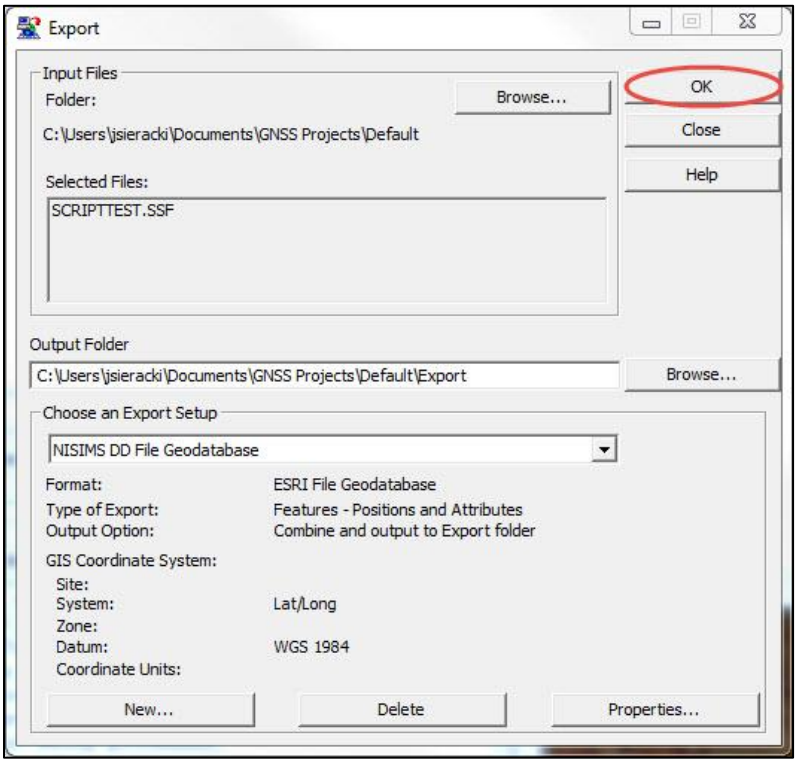
Make sure the box next to “Uncorrected” is checked. Click “OK” when done.

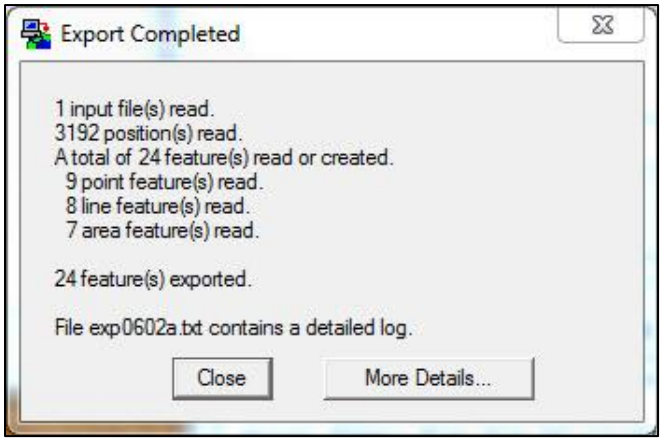


Step 9. Select your “Export Setup” created in Steps 5-8 from the drop-down menu.



Step 10. Click “OK”. When the “Export Completed” window opens, check that all features have been exported, and click” Close”.





Your export is now complete. Check it to make sure all data converted correctly and make changes as necessary. You may now upload it to the NISIMS website.

4. NISIMS Collector for ArcGIS

4.1 General Instructions

Users are encouraged to collect data using any method or technology that is most efficient for them. As an alternative to the TerraSync™ Data Dictionary, the Invasive Plant Program is also supporting the use of Collector for ArcGIS® for collecting NISIMS data in the field. Collector may be used on Android, iOS, and Windows devices (see website for device requirements: http://doc.arcgis.com/en/collector/). With Collector, you may make edits to the feature classes in the NISIMS Field Geodatabase while in the field, using the devices GPS capabilities or an external GPS antenna.

Some things to keep in mind if you choose to use Collector for field data collection:

- Not all Android, iOS, or Windows devices will run Collector. Be sure to review the device requirements at http://doc.arcgis.com/en/collector/.

- GPS accuracy may vary widely depending on the device you are using and its GPS capabilities. If accuracies are low, an external GPS antenna is advisable.

- If it is determined that an external GPS antenna is required, be sure that it will work with your device. For instance, some devices do not allow for the attachment of USB devices, requiring a Bluetooth device instead.

- An ArcGIS® Online account is required in order to download data from your device. This can be acquired from your Regional GIS coordinator.

- WiFi or cellular coverage is required in order to sync your device with your ArcGIS® Online account and to download data. Cellular coverage will require a monthly fee.

To ensure that data downloaded from Collector are successfully uploaded to the SDE geodatabase, some general instructions are provided here:

- The feature datasets and feature classes have been assigned a geographic coordinate system of NAD 83; however, you may maintain data in your preferred coordinate system. It will be converted by the WASO data manager prior to uploading to the SDE geodatabase.

- You only need to upload and output the feature classes you are using.

- You do not need to maintain the dataset structure from the NISIMS Field Geodatabase. You may upload the file geodatabase as exported by ArcGIS® Online.

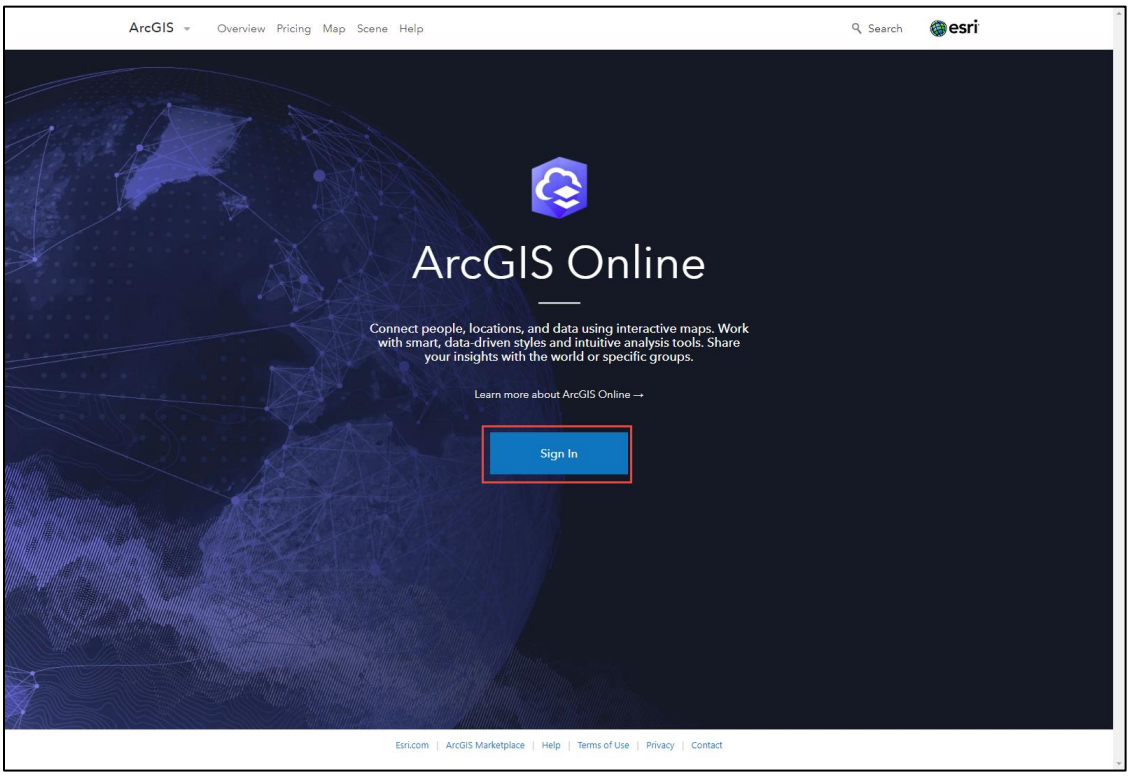
- You must maintain the feature class naming convention from the NISIMS Field Geodatabase.
- Do not rename any of the fields from the feature classes you are using.
- If you wish to add a value to any of the domains in the geodatabase, please contact the WASO data manager.
- If you need help modifying the field geodatabase for your team, contact the WASO data manager.
- Export all files from ArcGIS® Online in a file geodatabase.

4.2 Creating a Group in ArcGIS Online

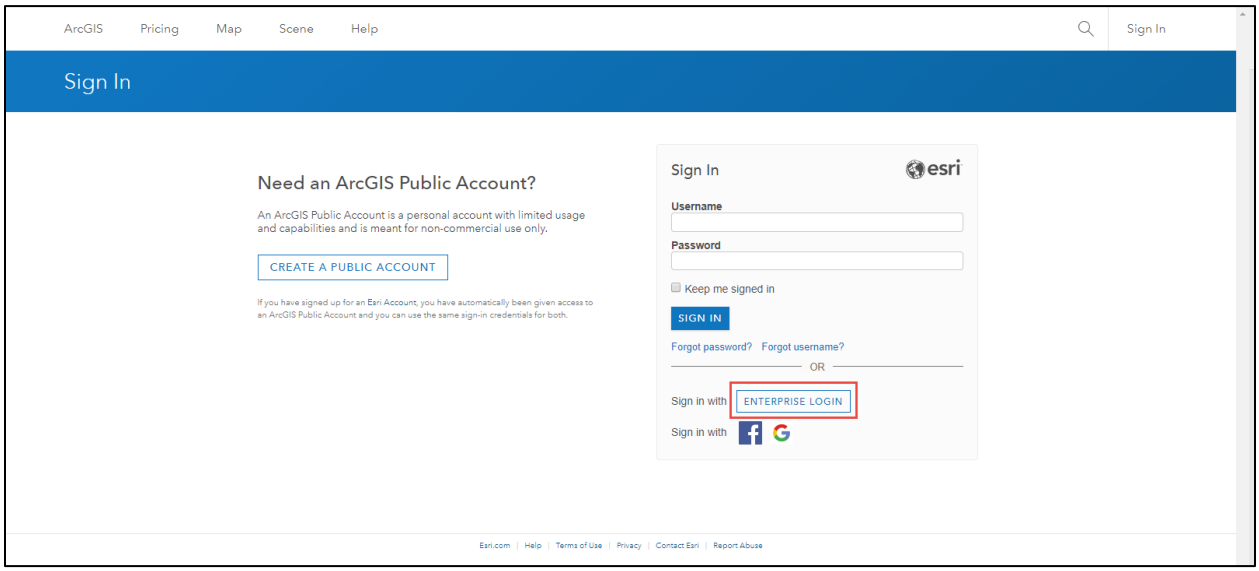
Prior to using Collector, you will need to contact your Regional GIS Coordinator for an ArcGIS® Online account. Before uploading layers to ArcGIS® Online, you must create a Group.

Instructions: Create a group at ArcGIS Online.

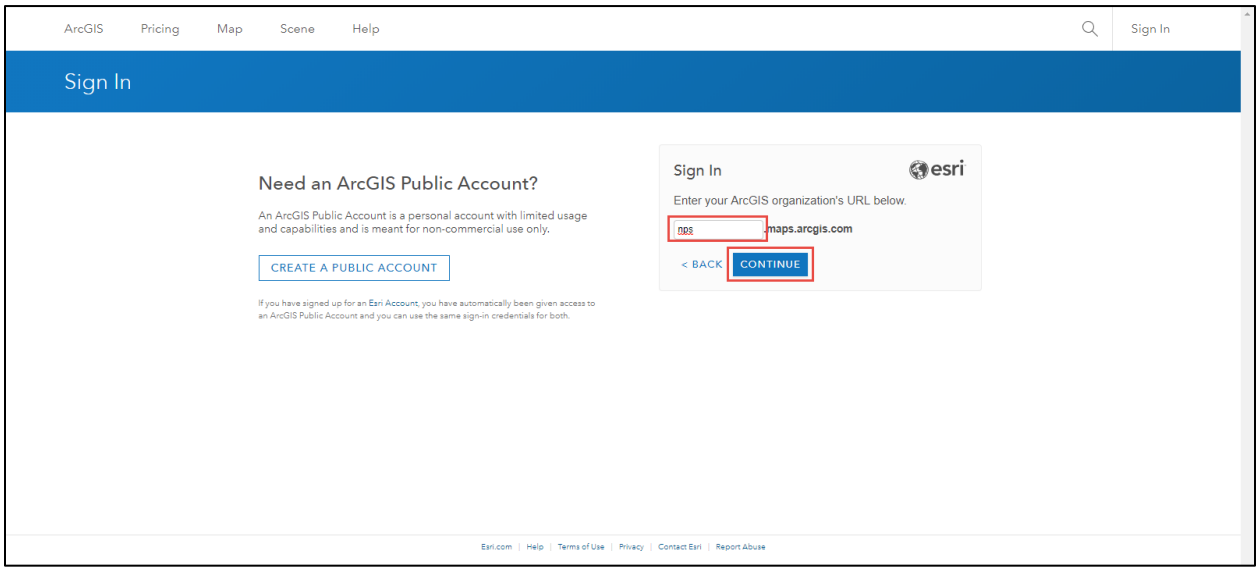
Step 1. Go to www.arcgis.com, and click "Sign In".



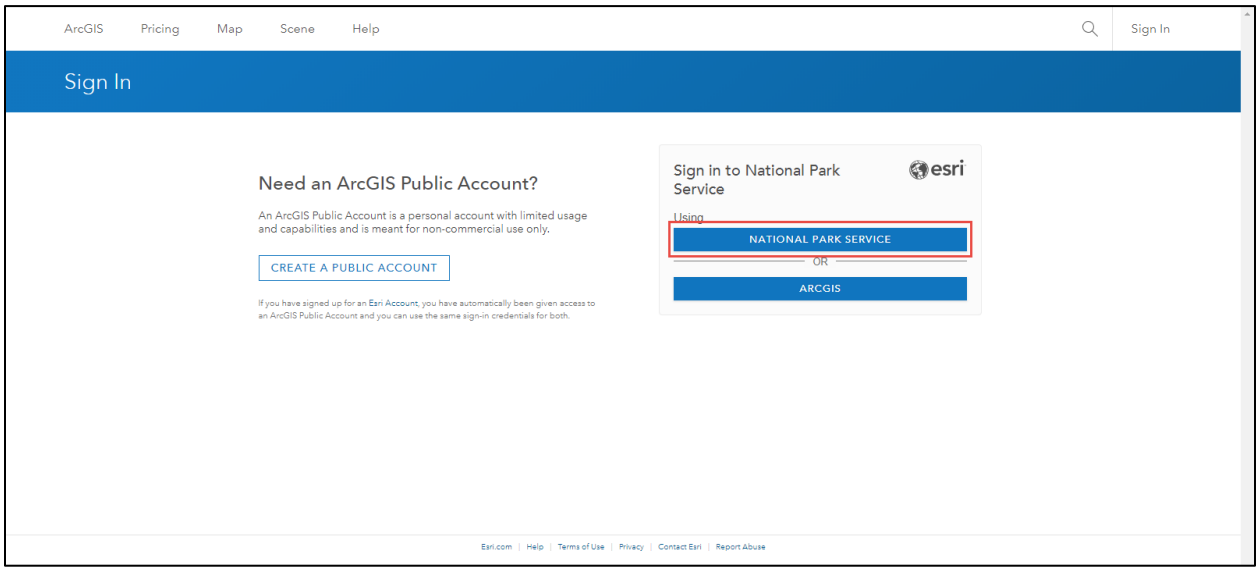
On the right-hand side of the screen that opens, click the “Enterprise Login” button.



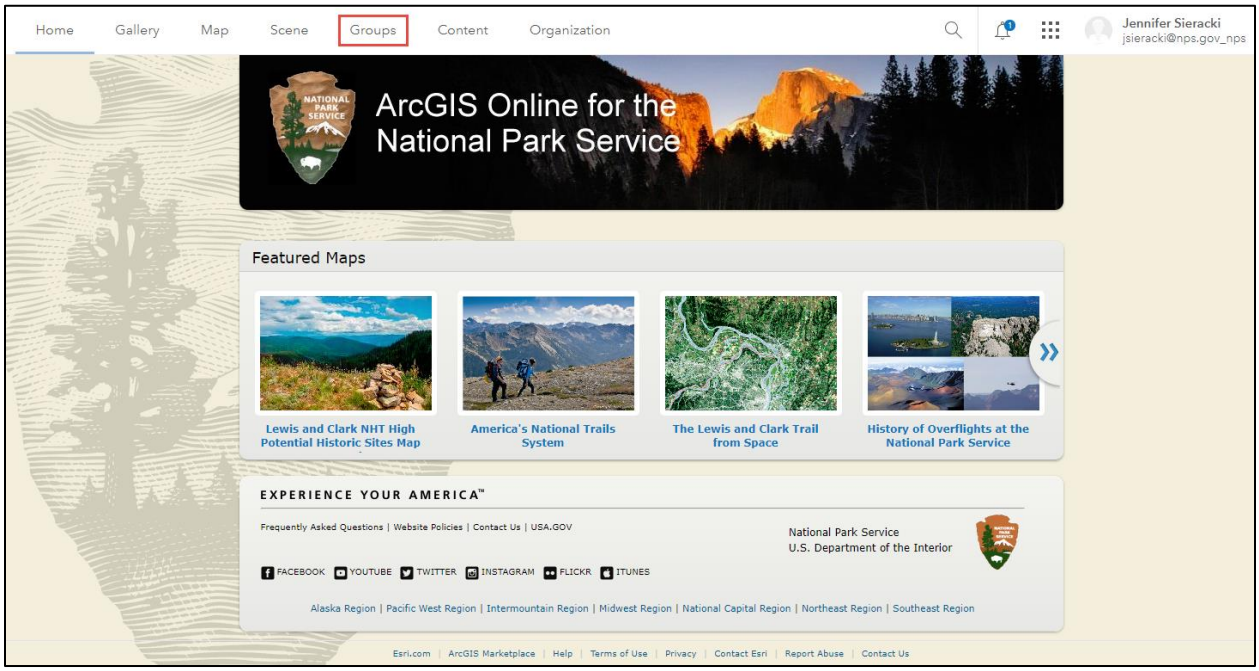
Enter “nps” in the box under “Enter your ArcGIS organization’s URL below.”, and click “Continue”.



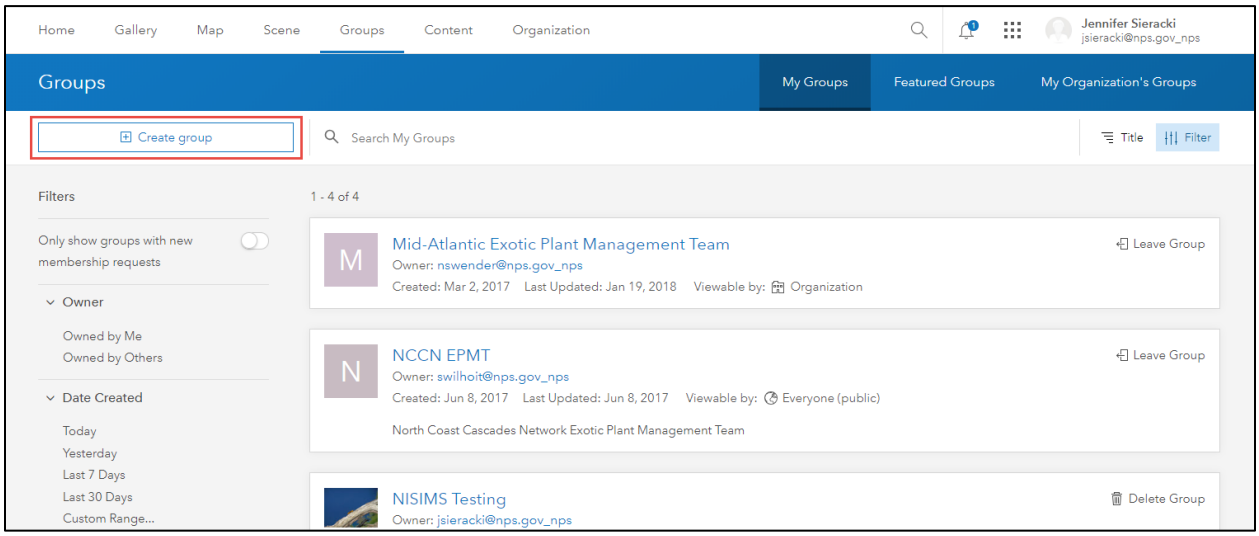
Click “National Park Service” on the next page.



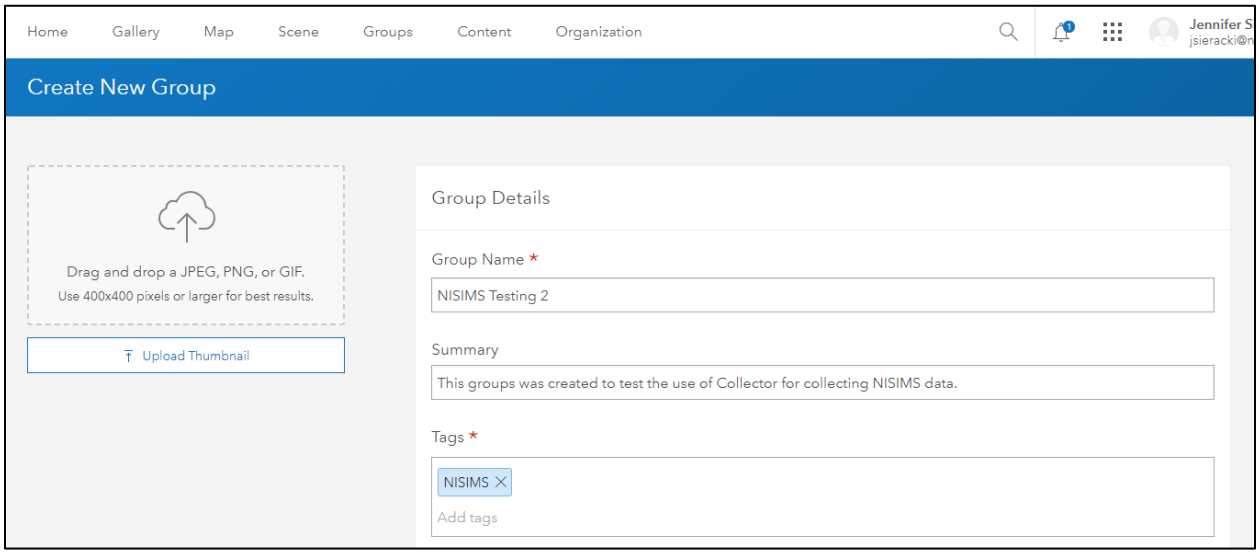
Step 2. Once logged in, click on “Groups” at the top of the web page.



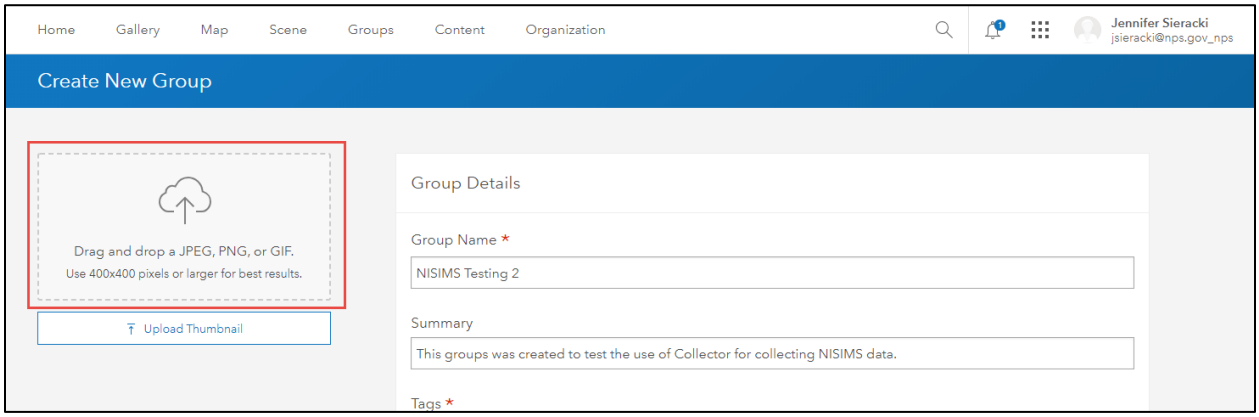
Step 3. On the left-hand side of the screen that opens, click “Create A Group”.

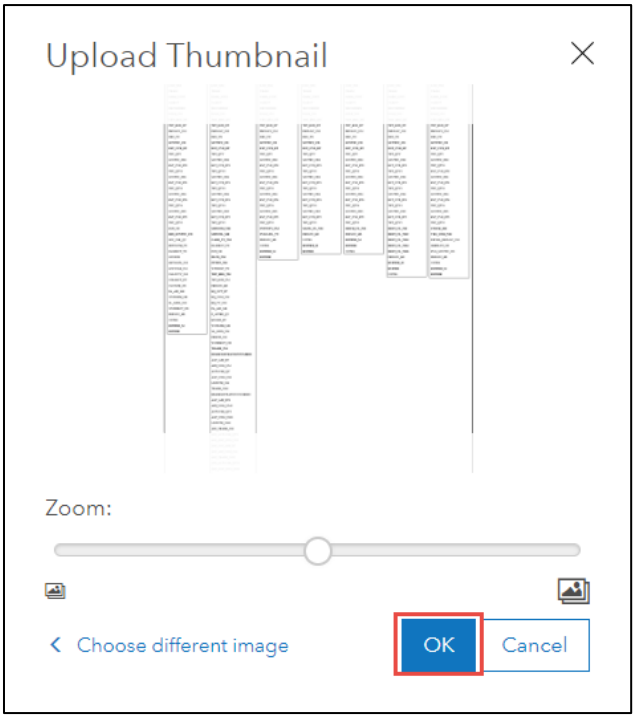


Step 4. In the window that opens, add a Name for your group, a Summary, and at least one Tag.

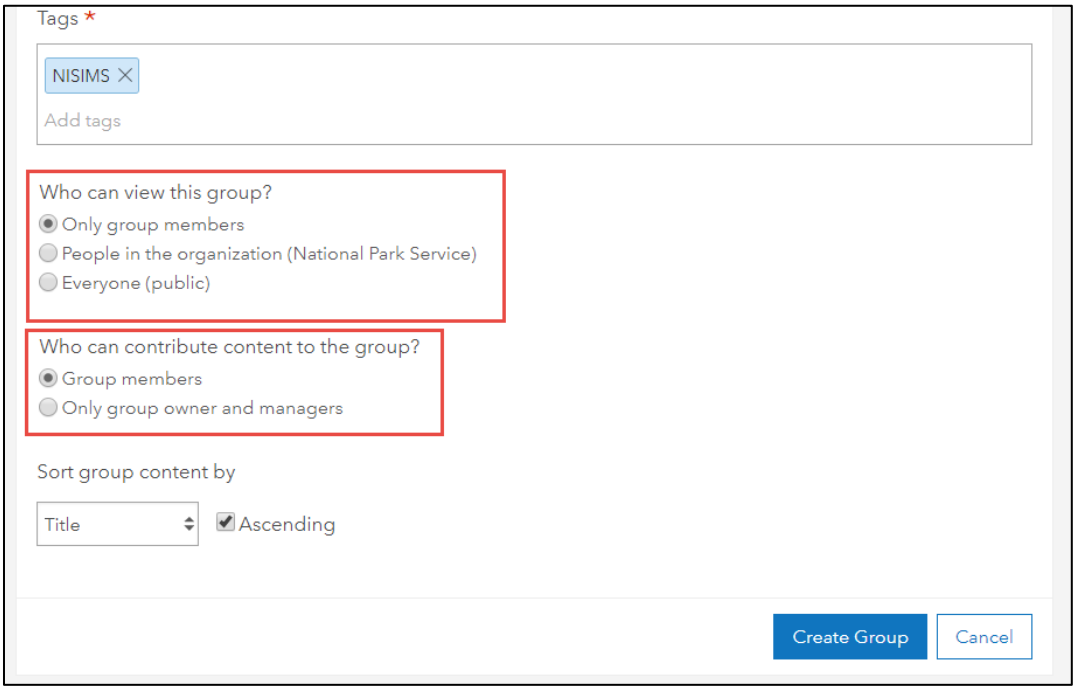


You may also add a thumbnail by dragging a JPEG, PNG, or GIF file onto the box in the upper-left corner of the screen. In the new window that opens, adjust your image using the Zoom bar, and click OK.

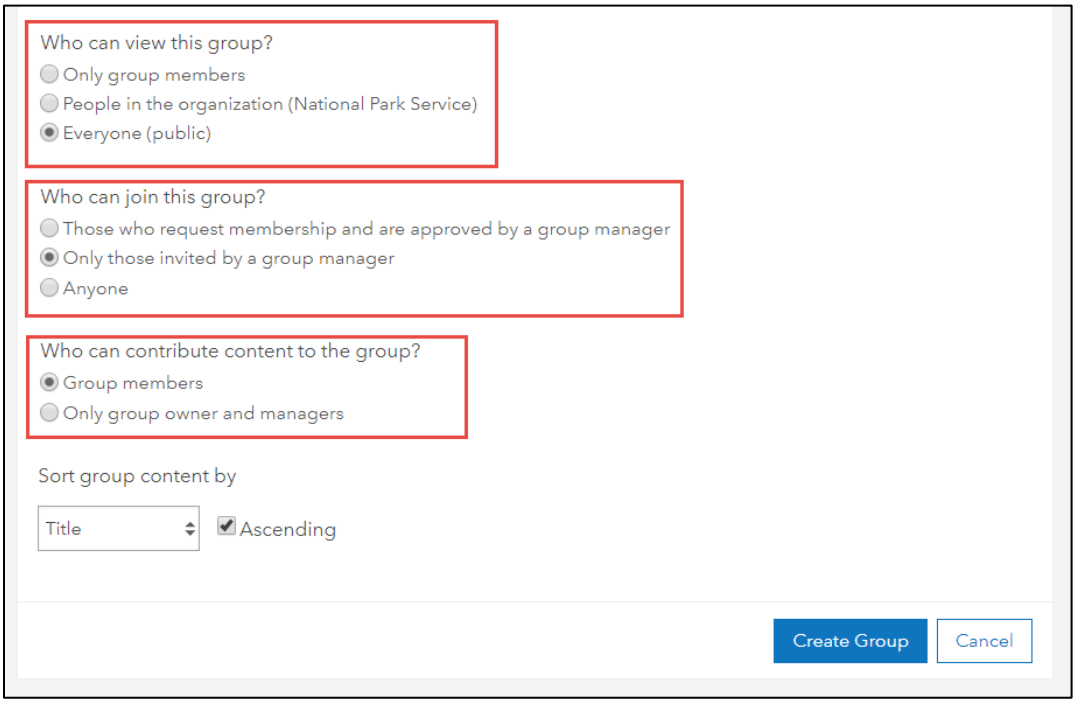




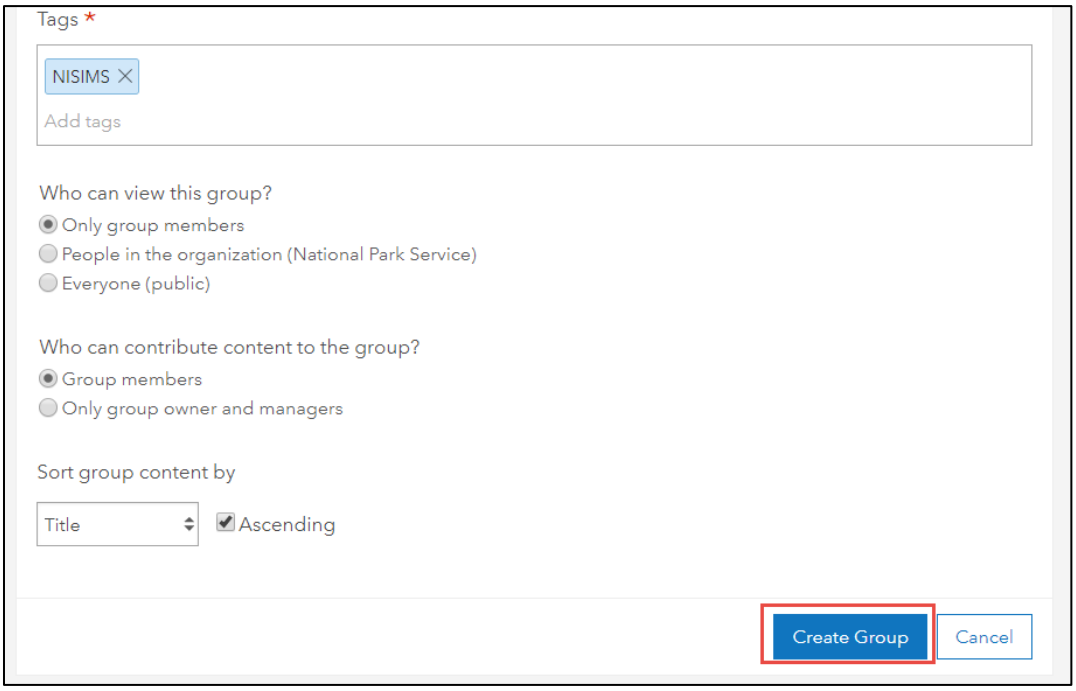
Select who you would like to be able to view the group. For the purposes of this demonstration, “Only group members” will be used, but you may make your group more widely available if you choose. If you make your group public, you may also decide who will be allowed to join the group. Finally, select who you would like to allow to contribute content to the group



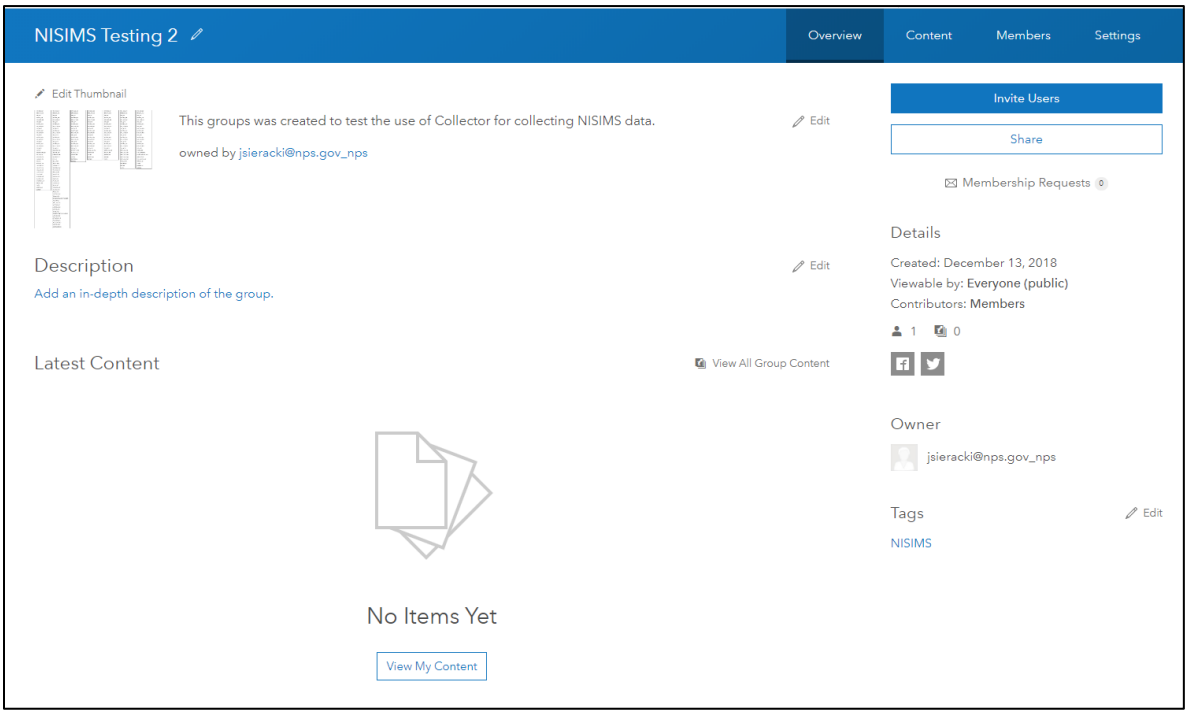
-- OR FOR PUBLIC --



Click “Create Group” once all group attributes have been entered.



Your group has been created.

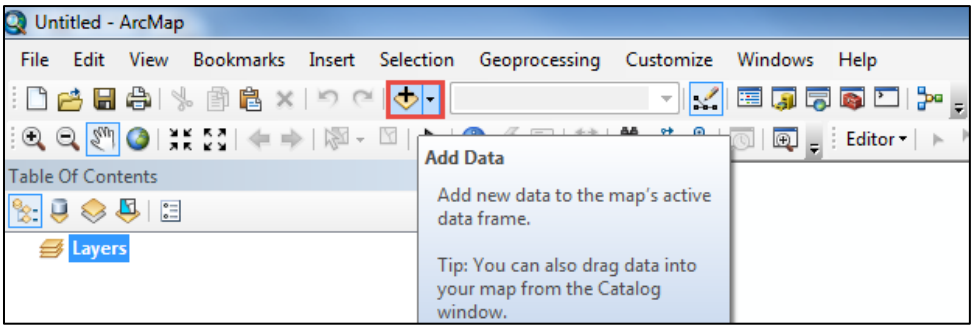


4.3 Adding Feature Classes to Collector

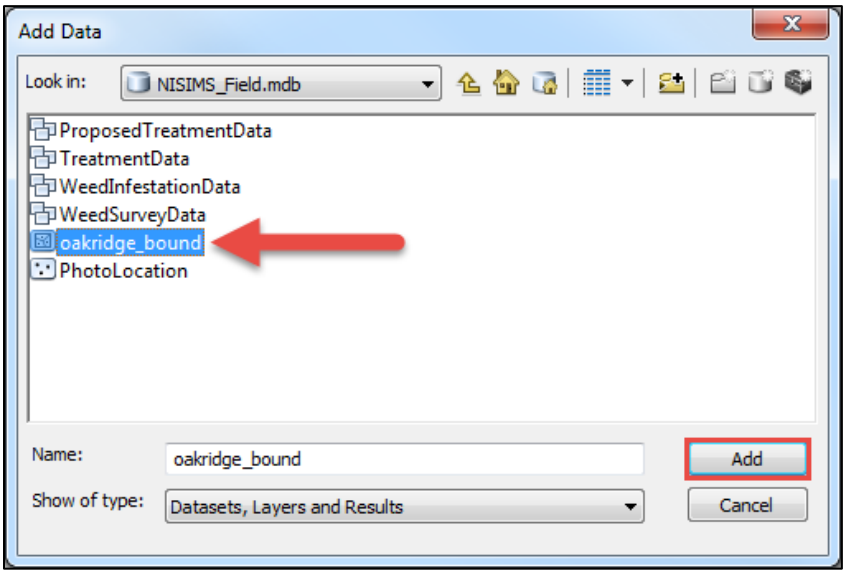
All of the feature classes from the NISIMS field geodatabase may be used to collect NISIMS data in the field with Collector. In order to minimize the size of the maps being viewed on your device, you will first have to set up your map for each day you will be collecting data.

Instructions: Set up your maps for data collection and add to Collector.
Step 1. From your desktop or the "Start Menu", open "ArcMap".

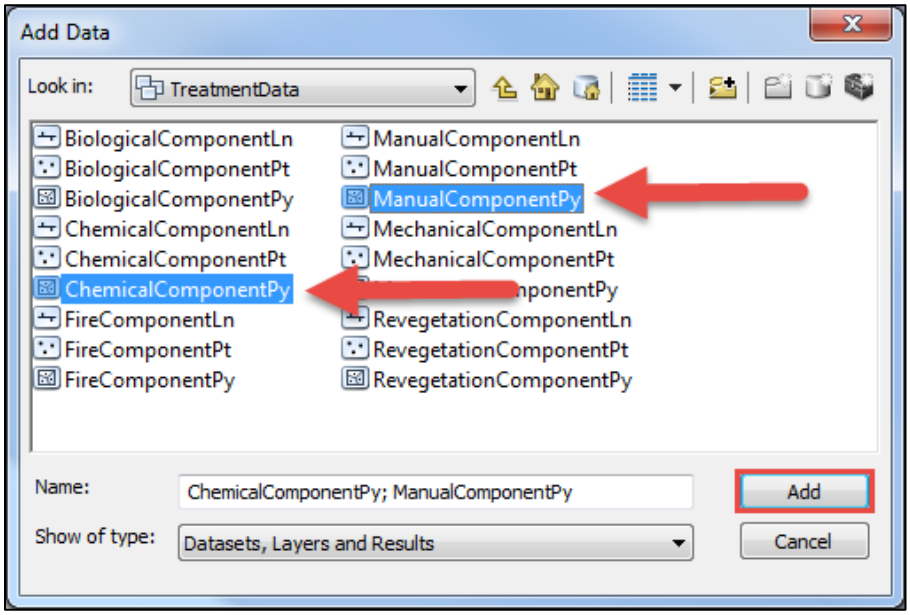
Step 2. Click the "Add Data" button.



Browse to a boundary file to help you zoom in on the location where you will be collecting data. This may be a park boundary or a project boundary that you previously created. Select the boundary file, and click "Add".

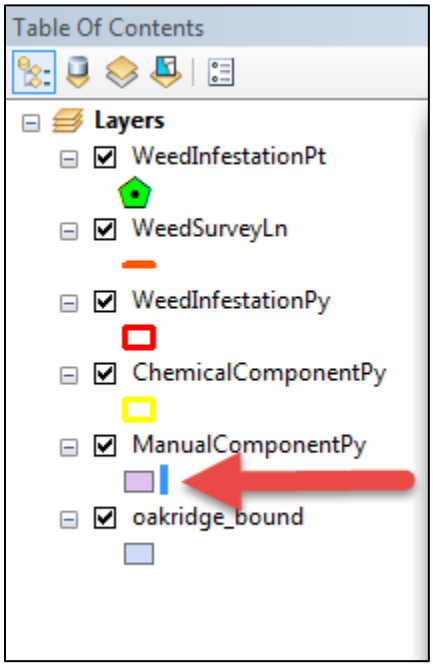


Step 3. Click the “Add Data” button again. This time browse to a NISIMS field geodatabase feature class for which you will be collecting data and click “Add”. You may select more than one feature class holding the Control-key while clicking. Repeat until you have added all feature classes.



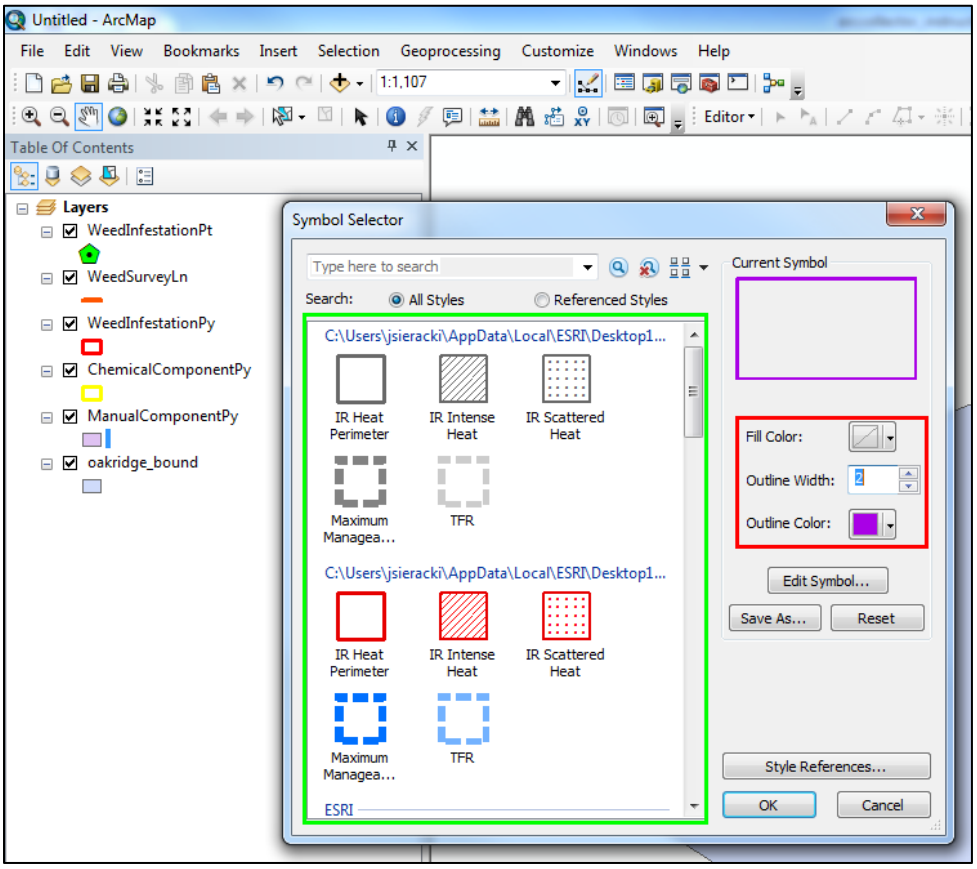
Step 4. Set the symbology of your feature classes so they will be visible and easy to use in the field. I suggest bright colors that will stand out against the aerial images in the background. I also suggest that polygons are made hollow, and that all lines are made thicker.

Double-click the symbol under the name of a feature class.



Double-click the icon below the feature class name

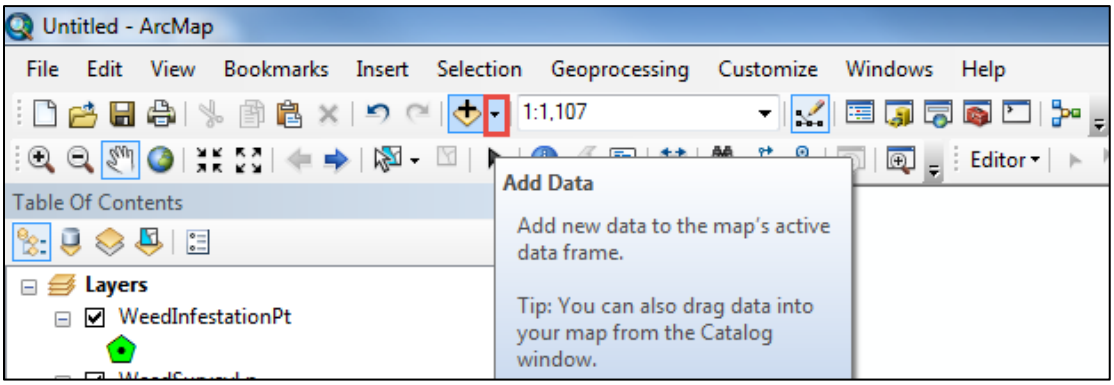
In the “Symbol Selector” window, you may change the style of your symbol in the box on the left (green box below), and the Fill Color, Outline Width, and Outline Color on the right panel (red box below). Available options will be different for each feature type (i.e. point, line, polygon). Once finished, click OK.



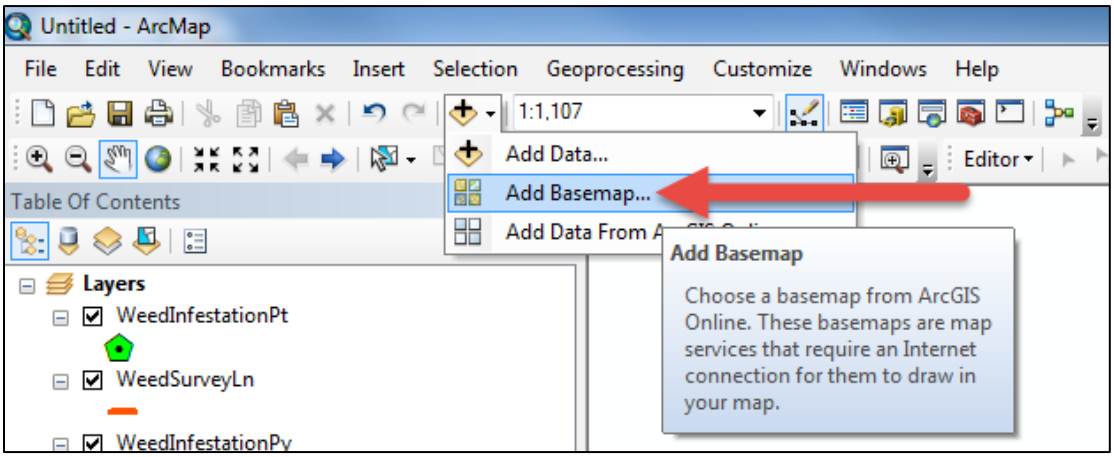
Repeat until all symbols meet your satisfaction. It is best to test your symbols on your device prior to collecting data in the field, as they may be difficult to see under certain conditions.

Step 5. Using the “Zoom In”, “Zoom Out”, and “Pan” buttons, adjust the view to the extent of the area where you will be collecting data. The location of this toolbar will vary. Be sure to include all areas where you may potentially collect data. It may help to add a basemap.

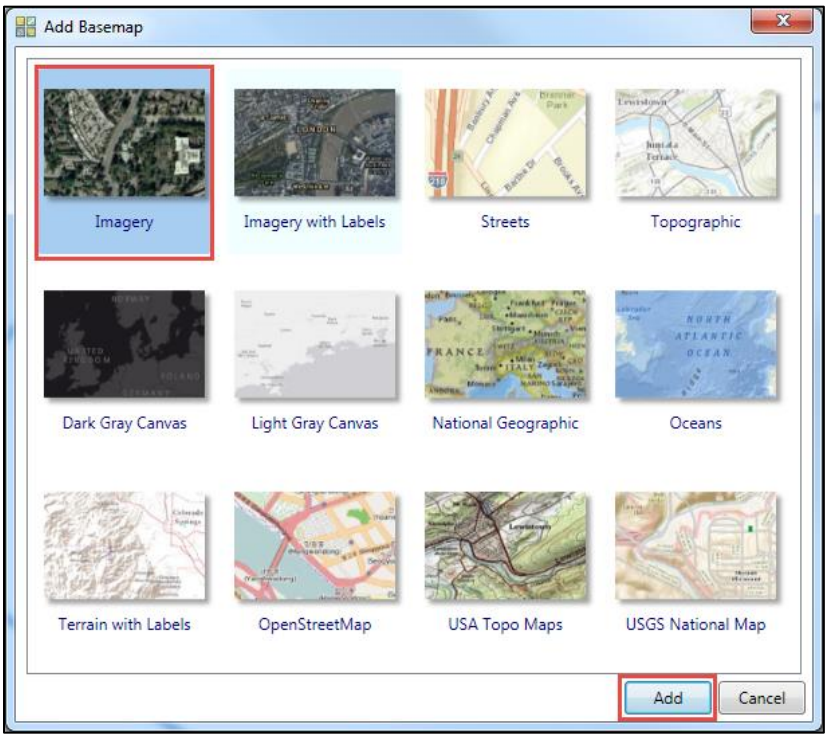
To add a basemap, click the arrow next to the “Add Data” button.

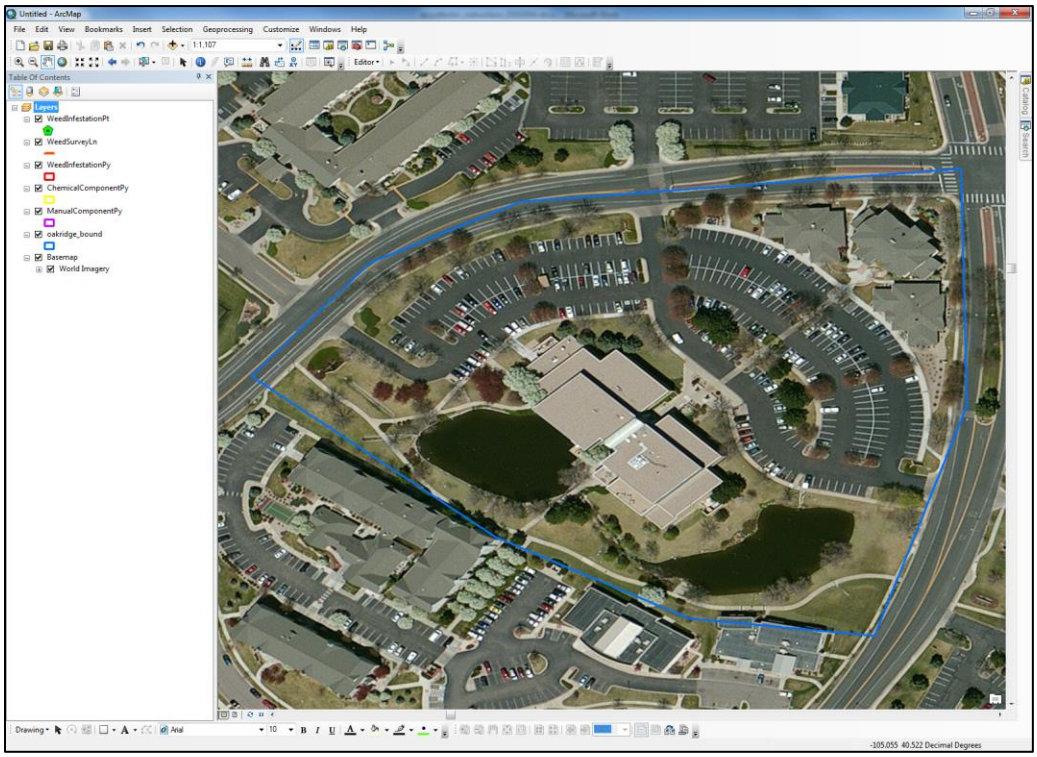


Select “Add Basemap…”.

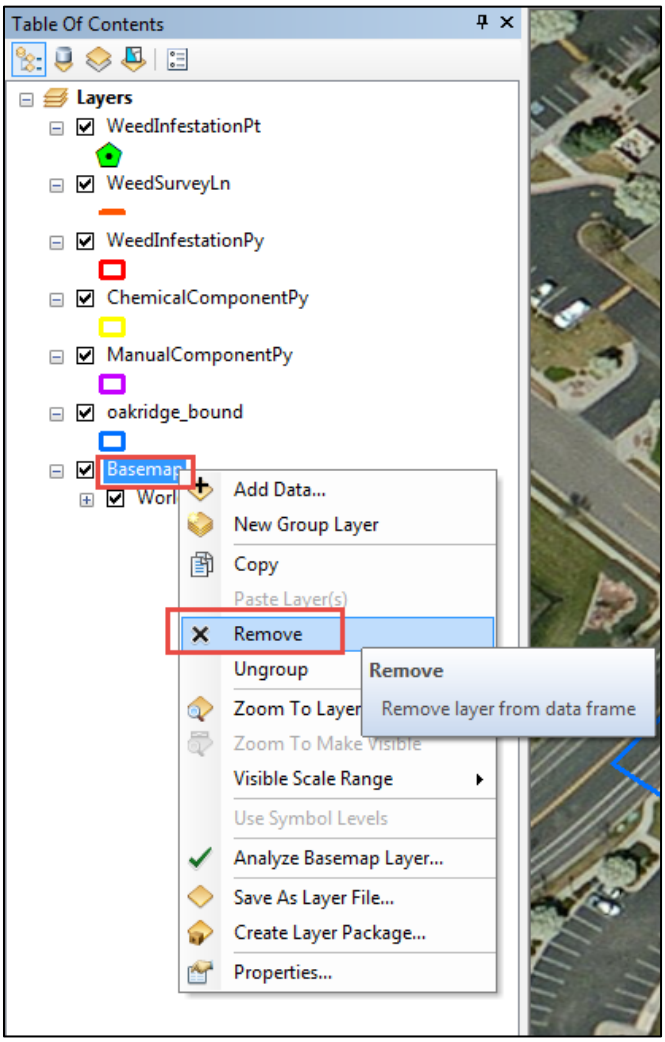


In the window that opens, select the basemap you would like to add and click “Add”. Depending on your computer, connection speed, and map extent the image may take several minutes to load.

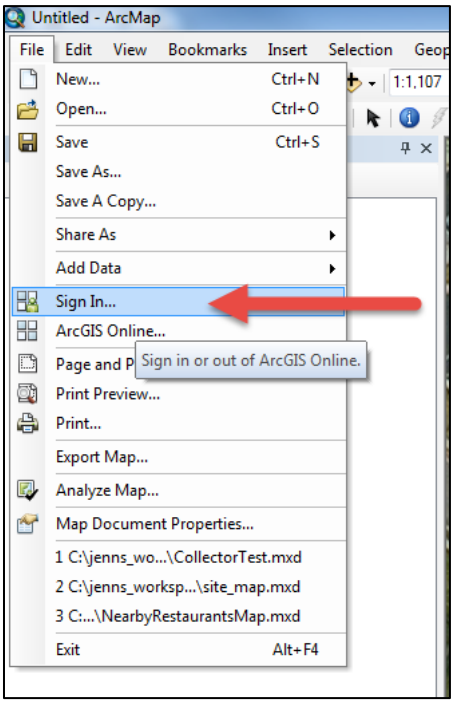




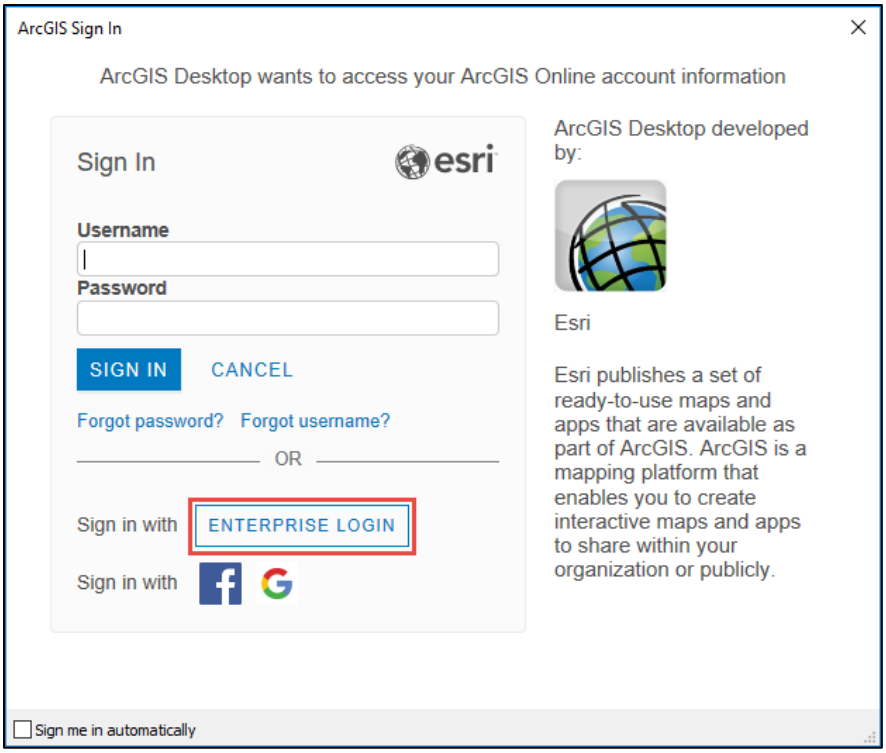
Once you are happy with the map extent, remove the basemap layer by right-clicking on “Basemap” in the Table of Contents, and selecting “Remove”.



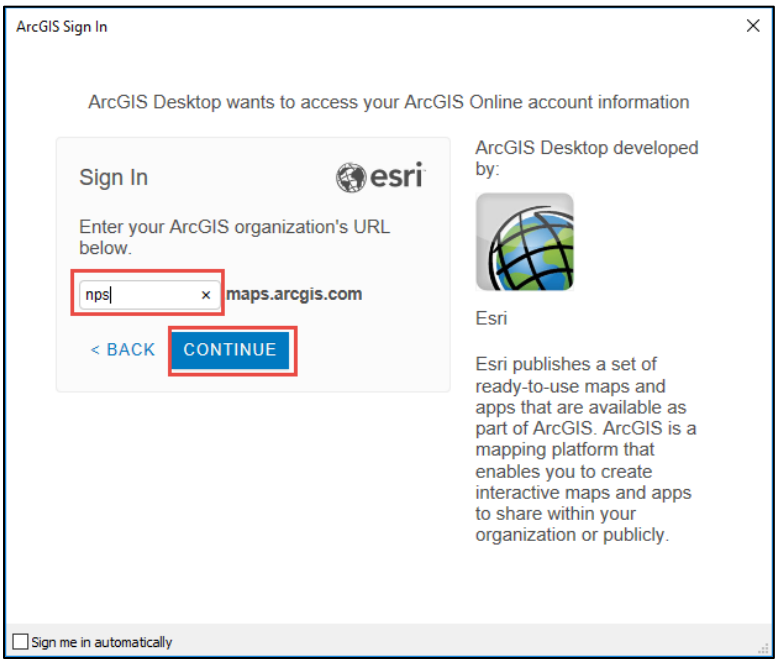
Step 6. Open the File menu, and select “Sign In…”.



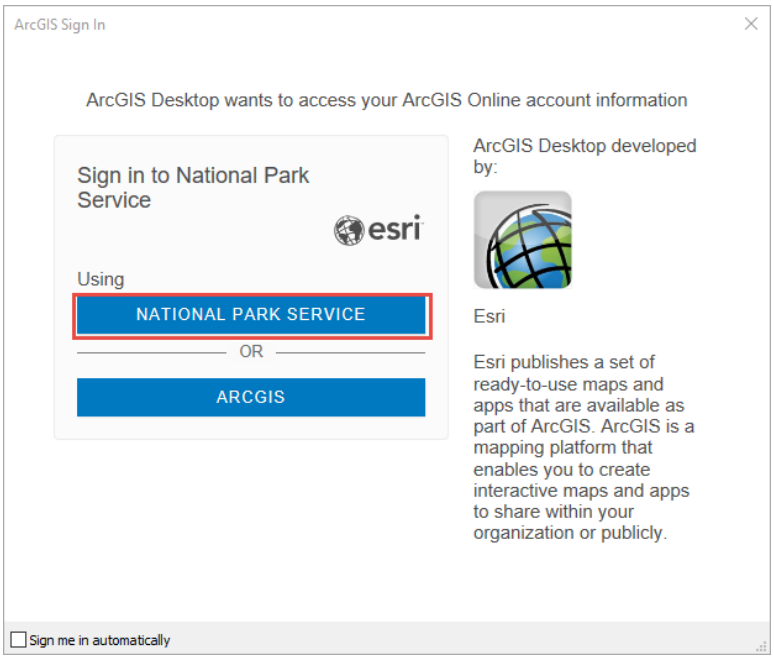
Click the “Enterprise Login” button.



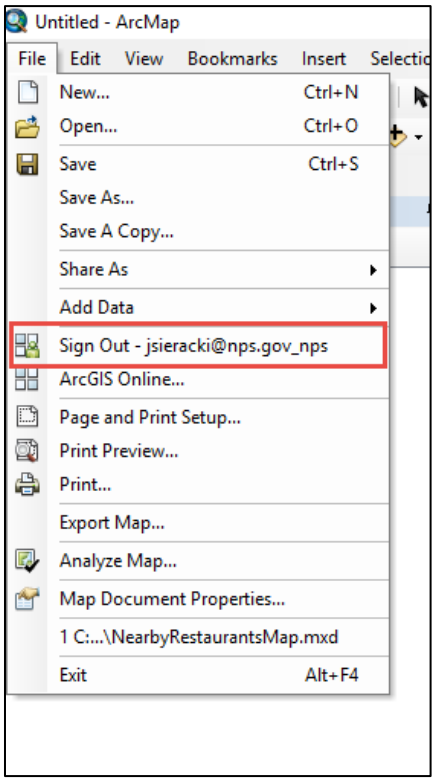
Enter NPS in the empty box under “Enter your ArcGIS organization’s URL below.”, and click “Continue”.



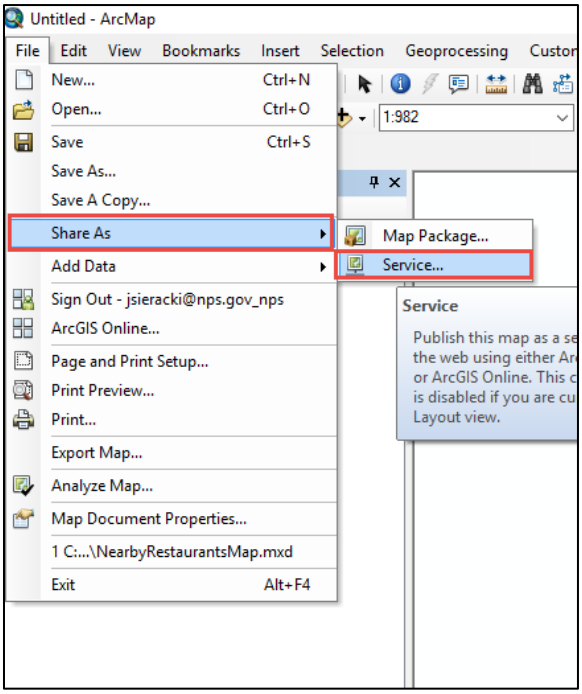
Finally, select “National Park Service”.



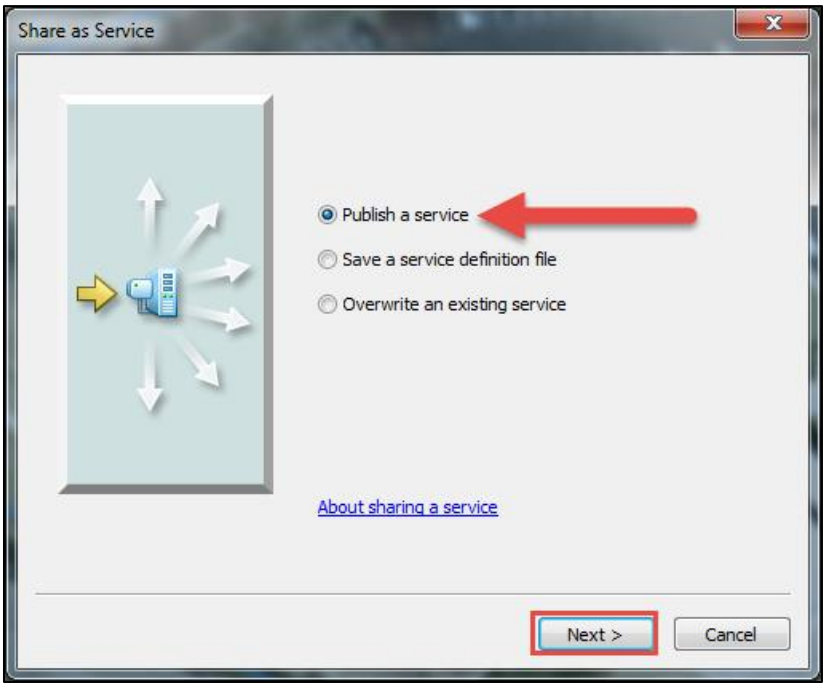
Check that you are signed in from the File menu.



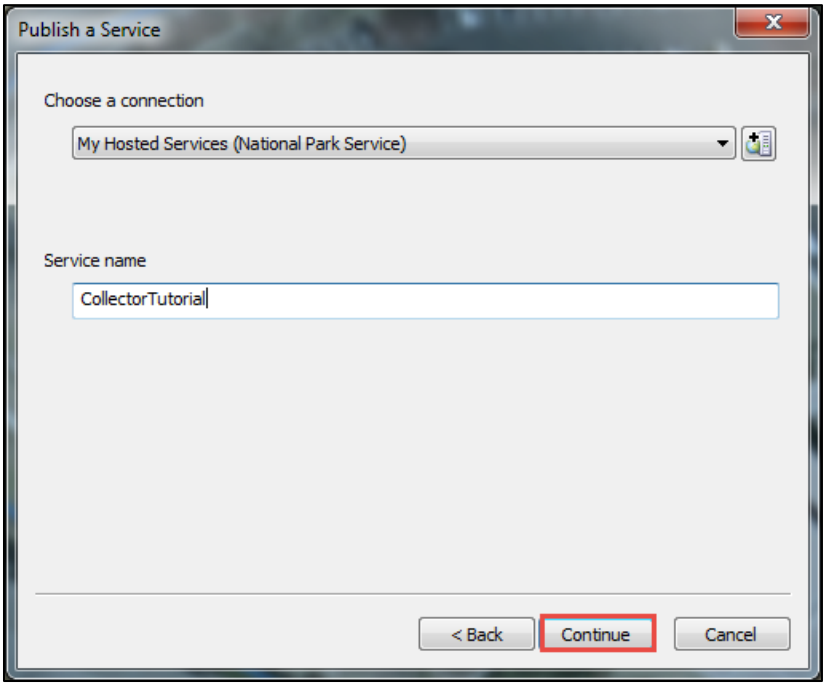
Step 7. From the File menu, hover over “Share As”, then select “Service”.



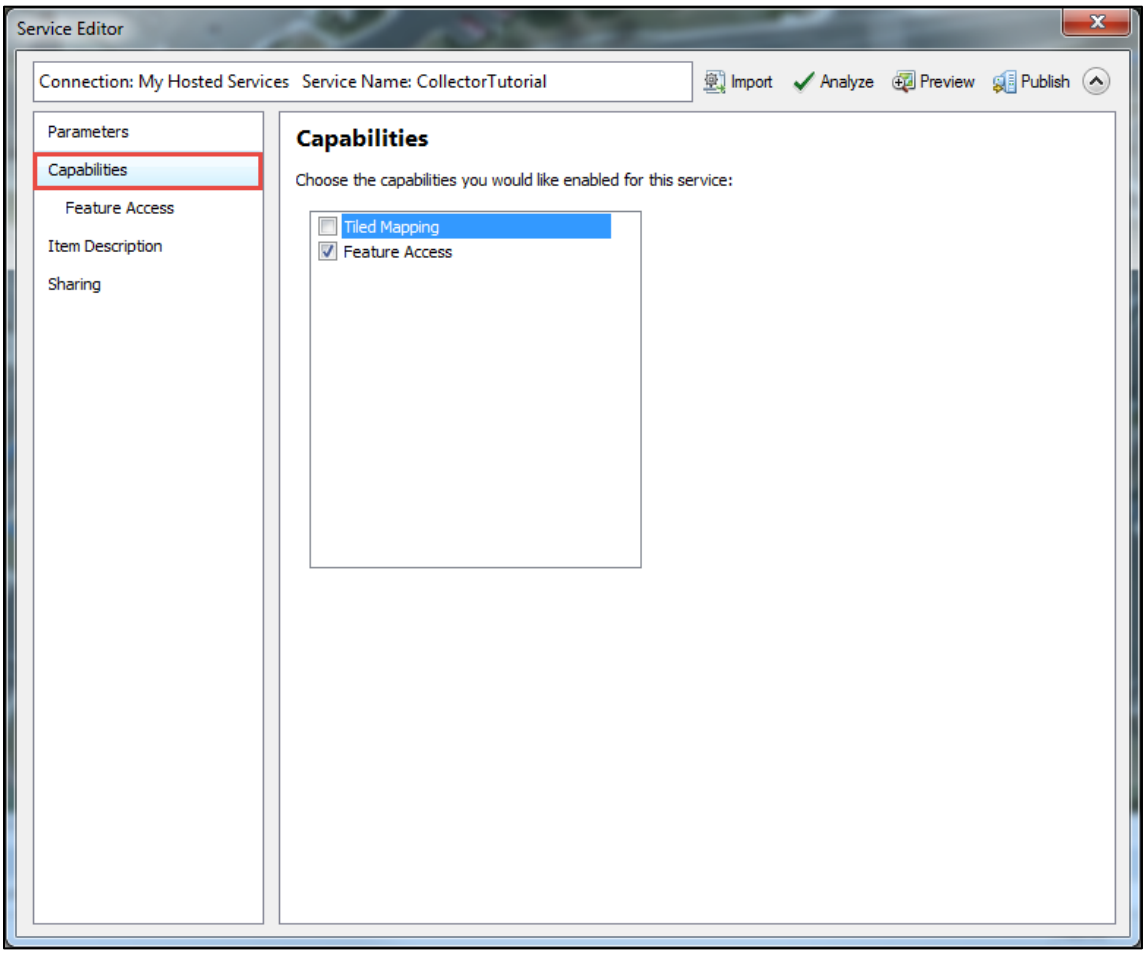
In the window that opens, select “Publish a service” and click Next.



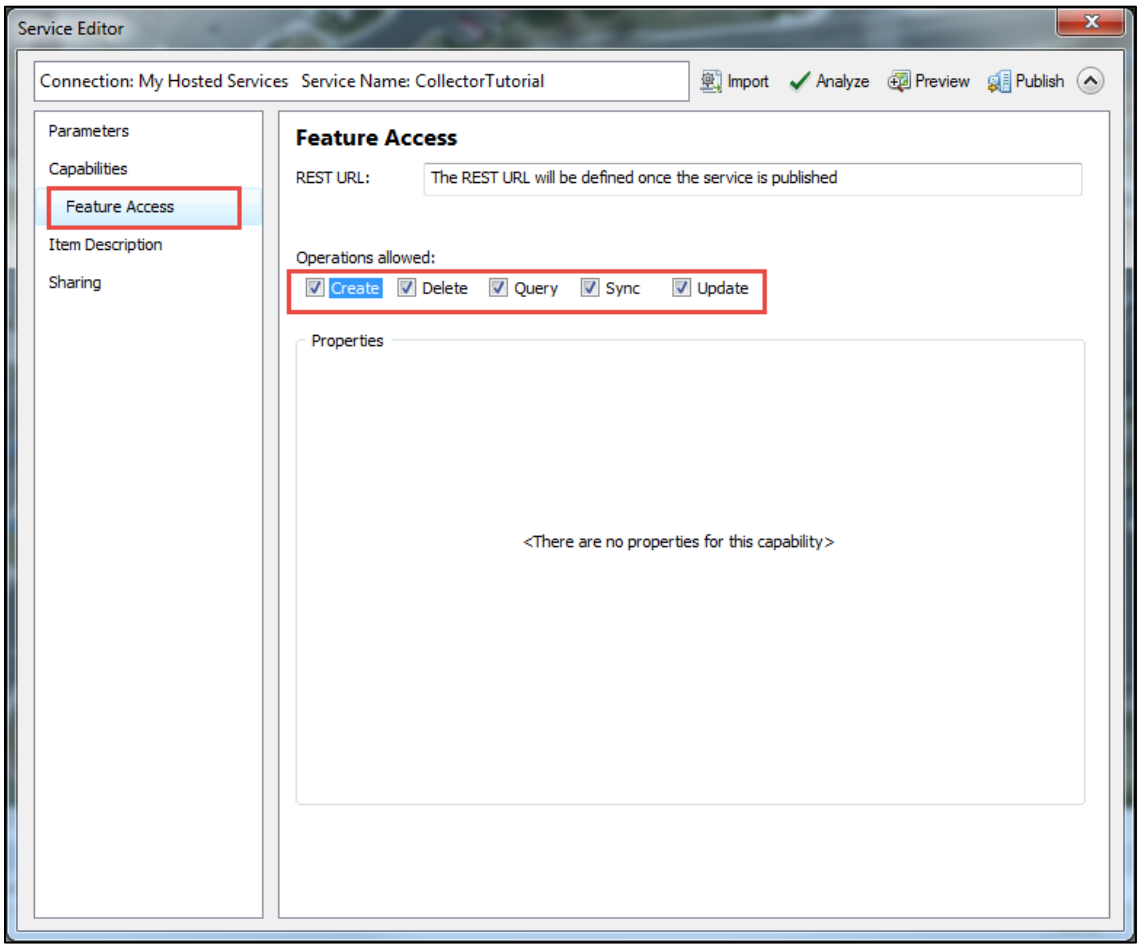
In the next window, under “Choose a connection”, select “My Hosted Services (National Park Service)” from the drop-down menu. Provide a name under “Service name” (no spaces). Click Continue.



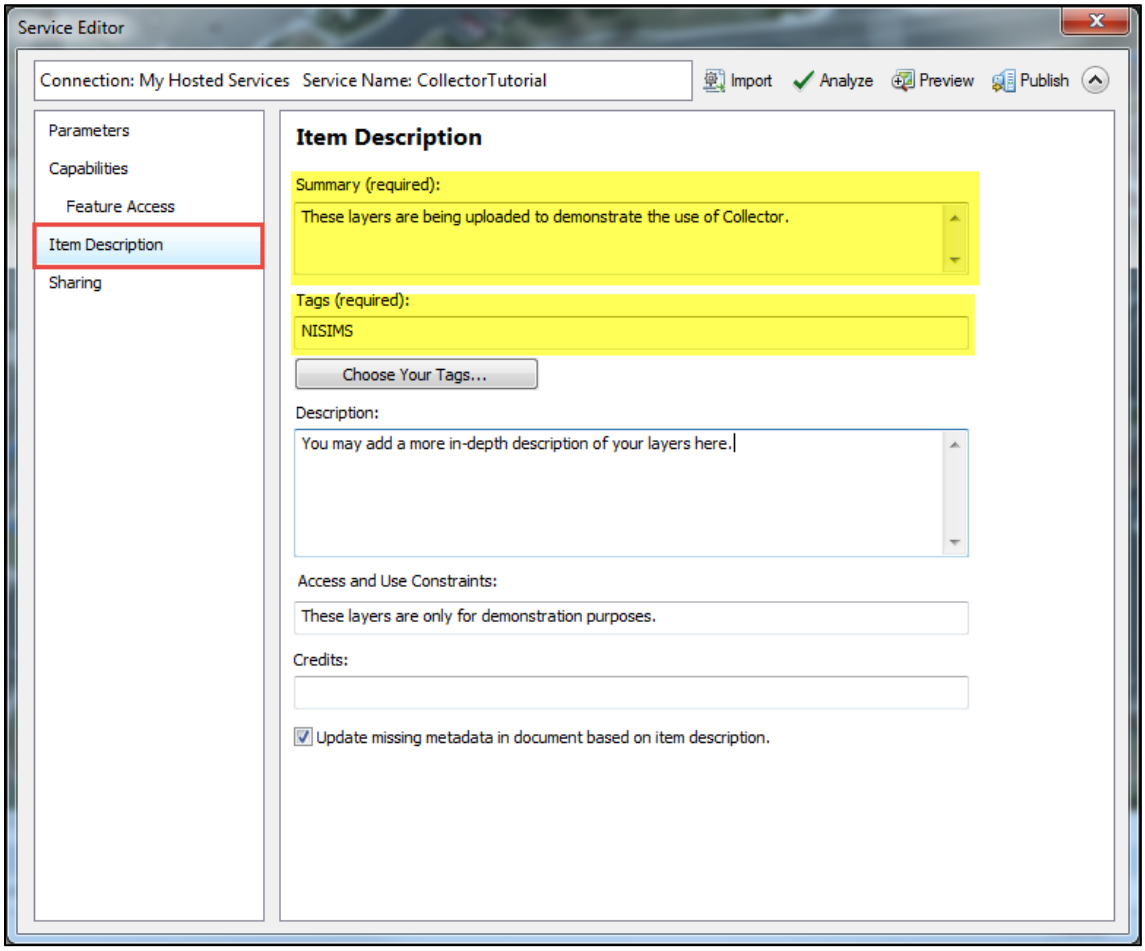
In the next window, click on “Capabilities” in the left pane. Click “Feature Access” and un-click “Tiled Mapping” in the right pane.



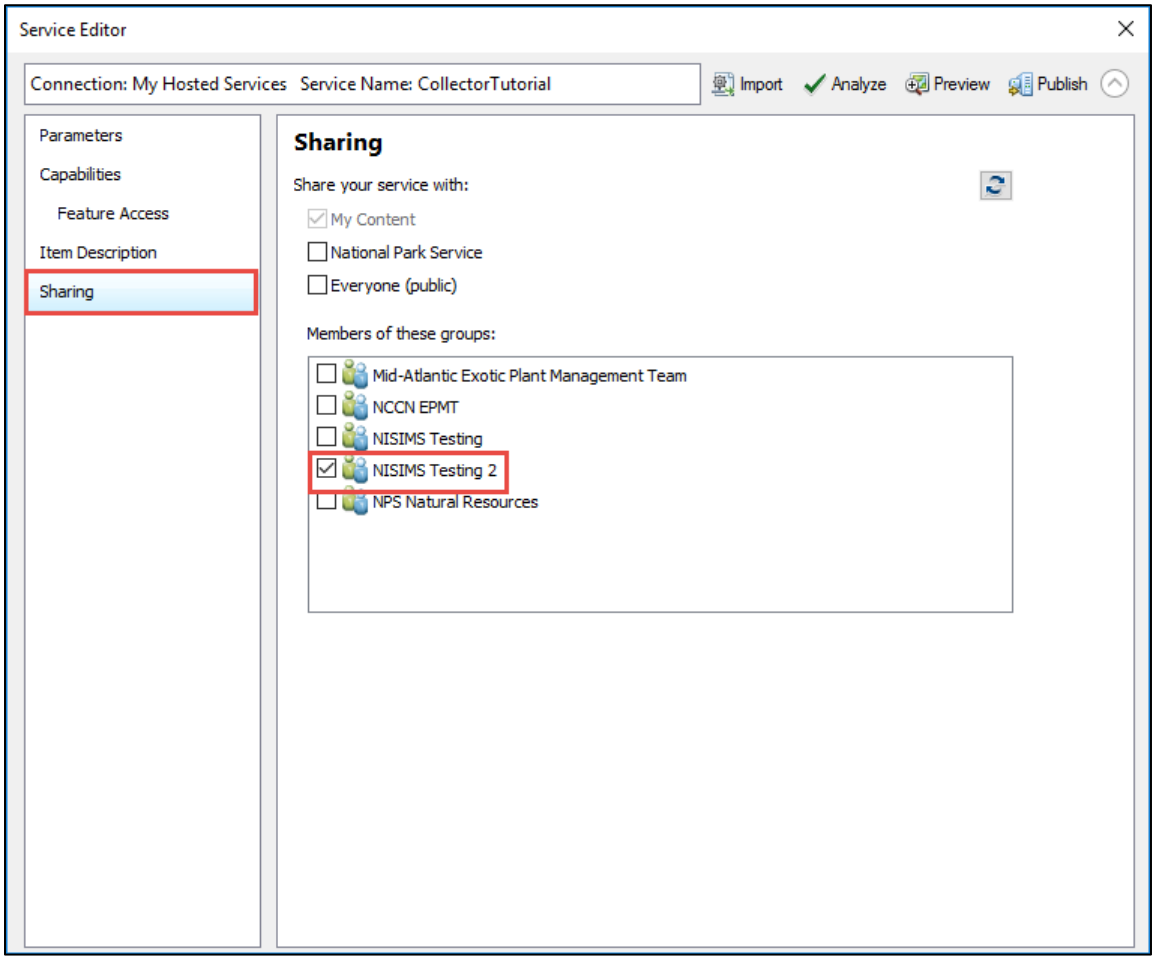
Click “Feature Access” in the left pane. In the right pane, check all of the boxes in under “Operations allowed”.



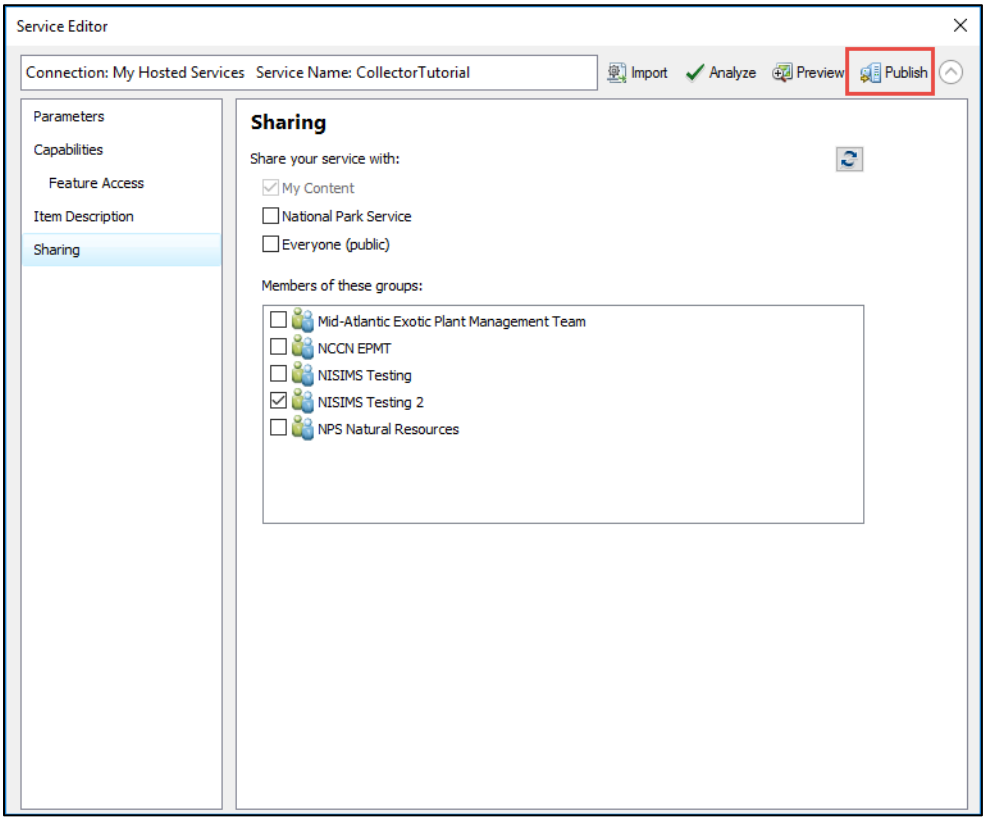
Click “Item Description” in the left pane. In the right pane, enter a Summary of what the layers represent and add at least one Tag (required items highlighted in yellow below). You may also add additional information to the remaining text boxes as needed or desired.



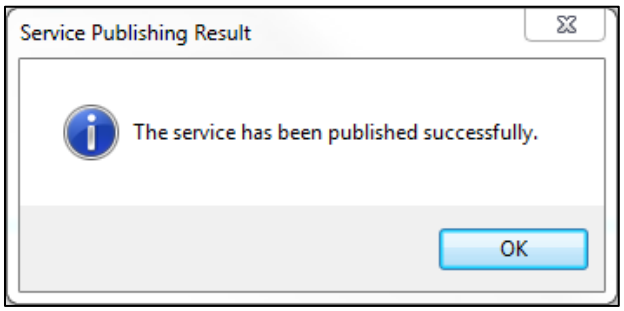
Click “Sharing” in the left pane. You may choose to share your data with the National Park Service, or everyone with an ArcGIS Online account. At the very least, you must share your data with the group you created in the previous step.



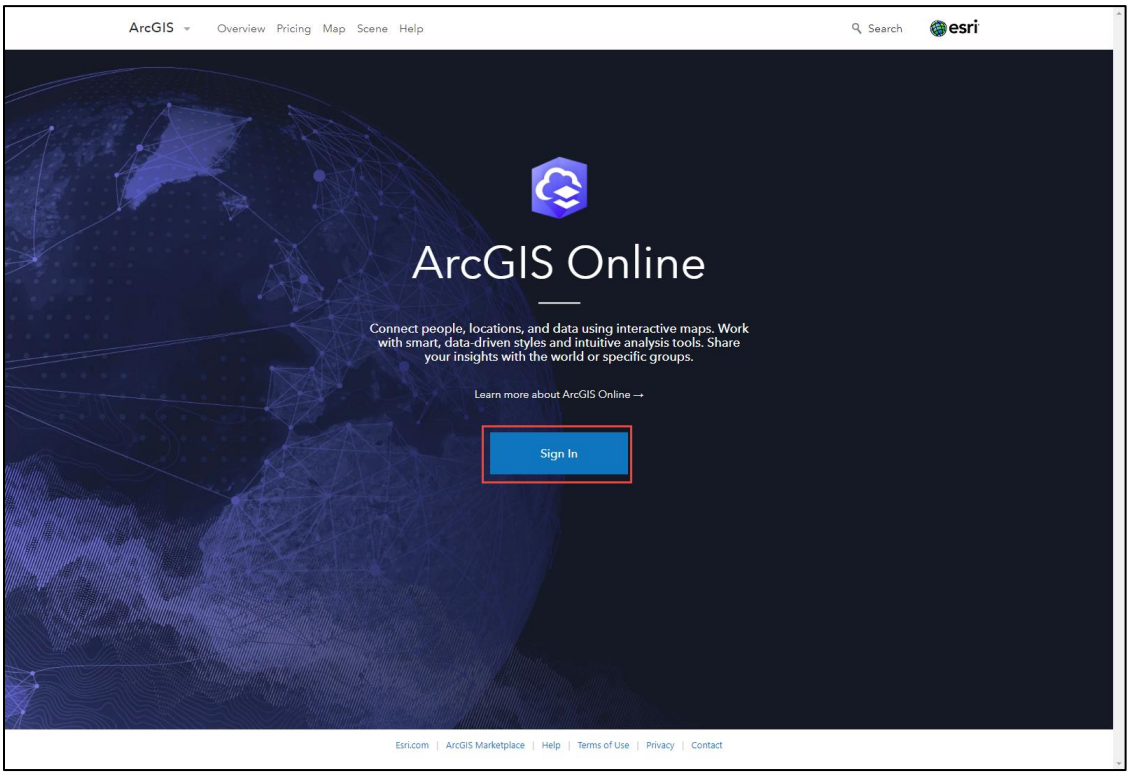
Once changes have been made to “Capabilities”, “Item Description”, and “Sharing”, click “Publish” in the top right-hand corner. This may take several minutes depending on the size of your map extent or the speed of your internet connection.



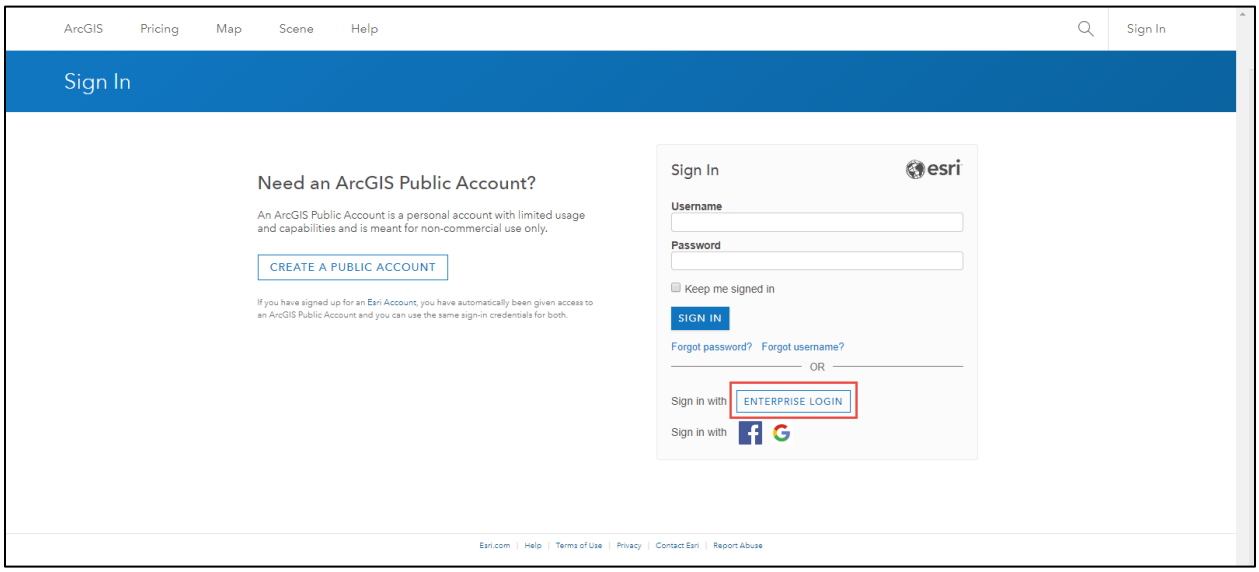
A new window will open once the data is published telling you the service was published successfully. Click “OK”.



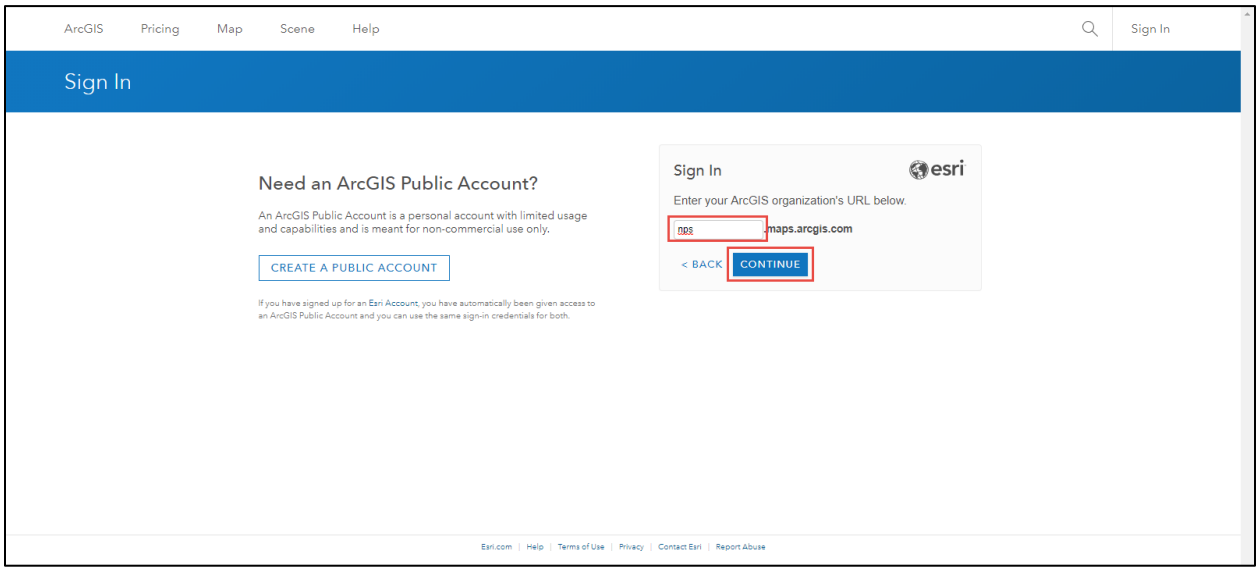
Step 8. Go to www.arcgis.com, and click “Sign In”.



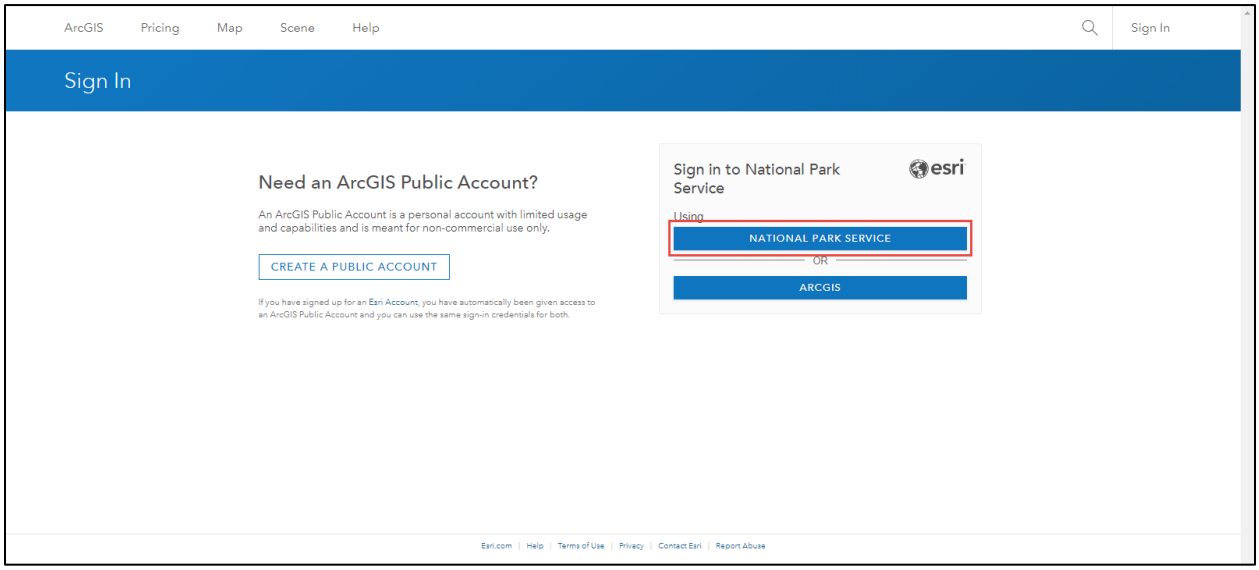
On the right-hand side of the screen that opens, click the “Enterprise Login” button.



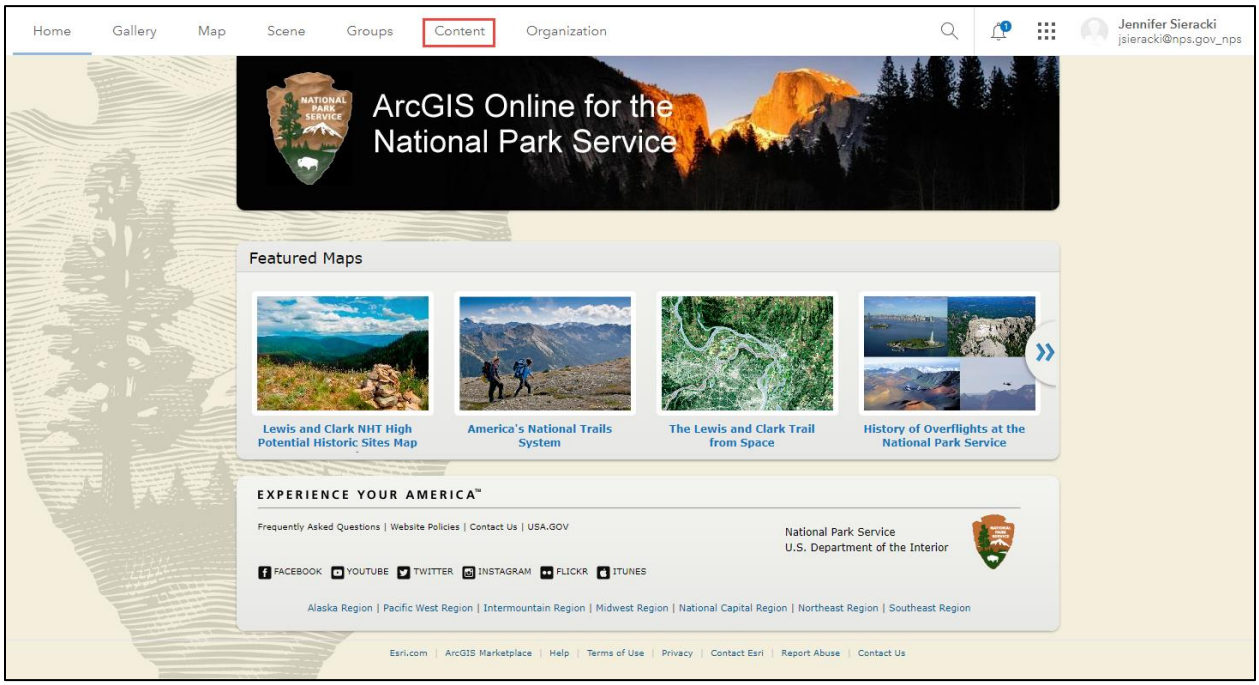
Enter “nps” in the box under “Enter your ArcGIS organization’s URL below.”, and click “Continue”.



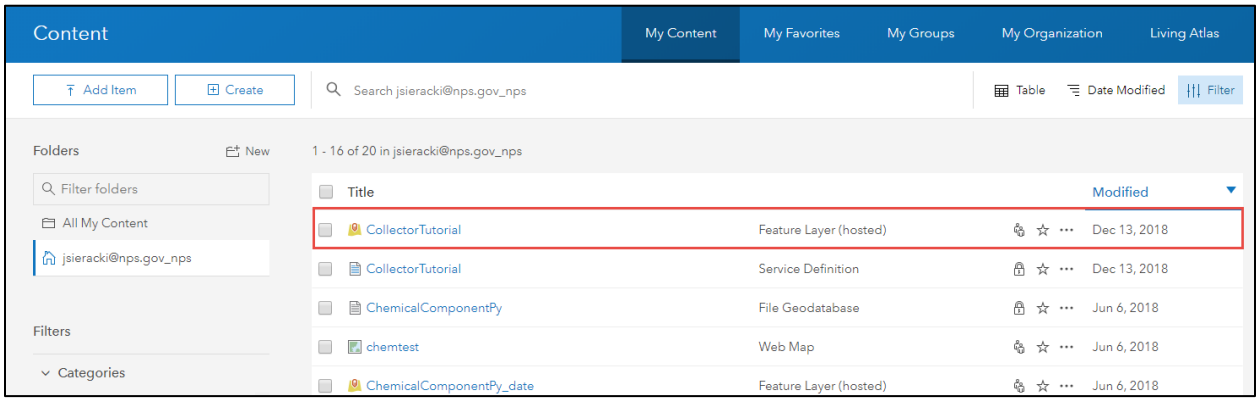
Click “National Park Service” on the next page.

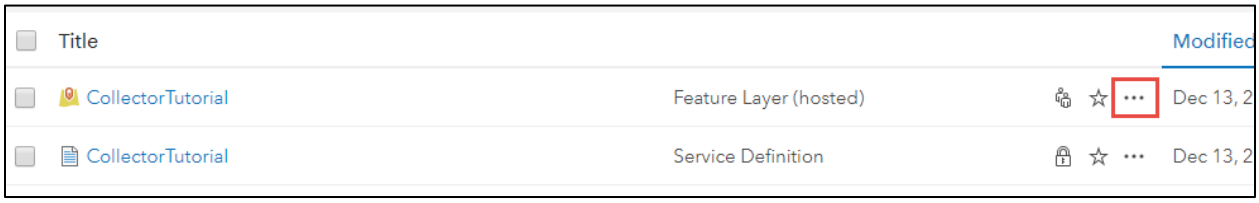


Step 9. Once logged in, select “Content” from the top of the webpage.



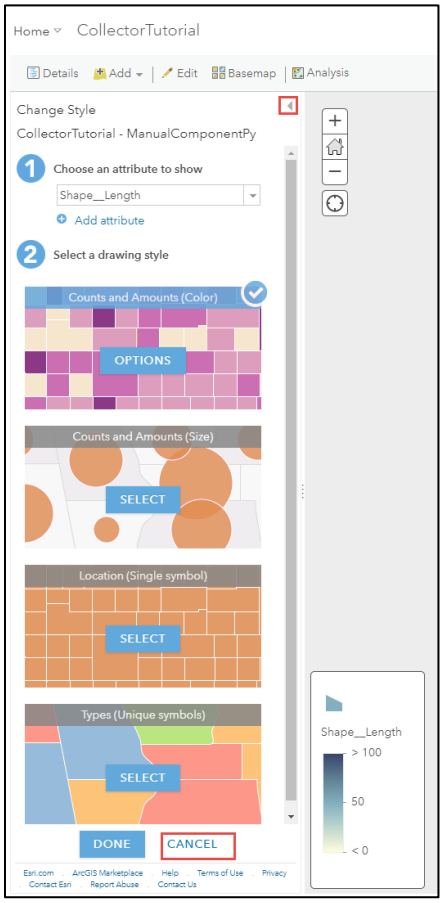
Step 10. From the list of files, find the feature layer you just created in ArcMap and select the ellipses on the right end of its record.



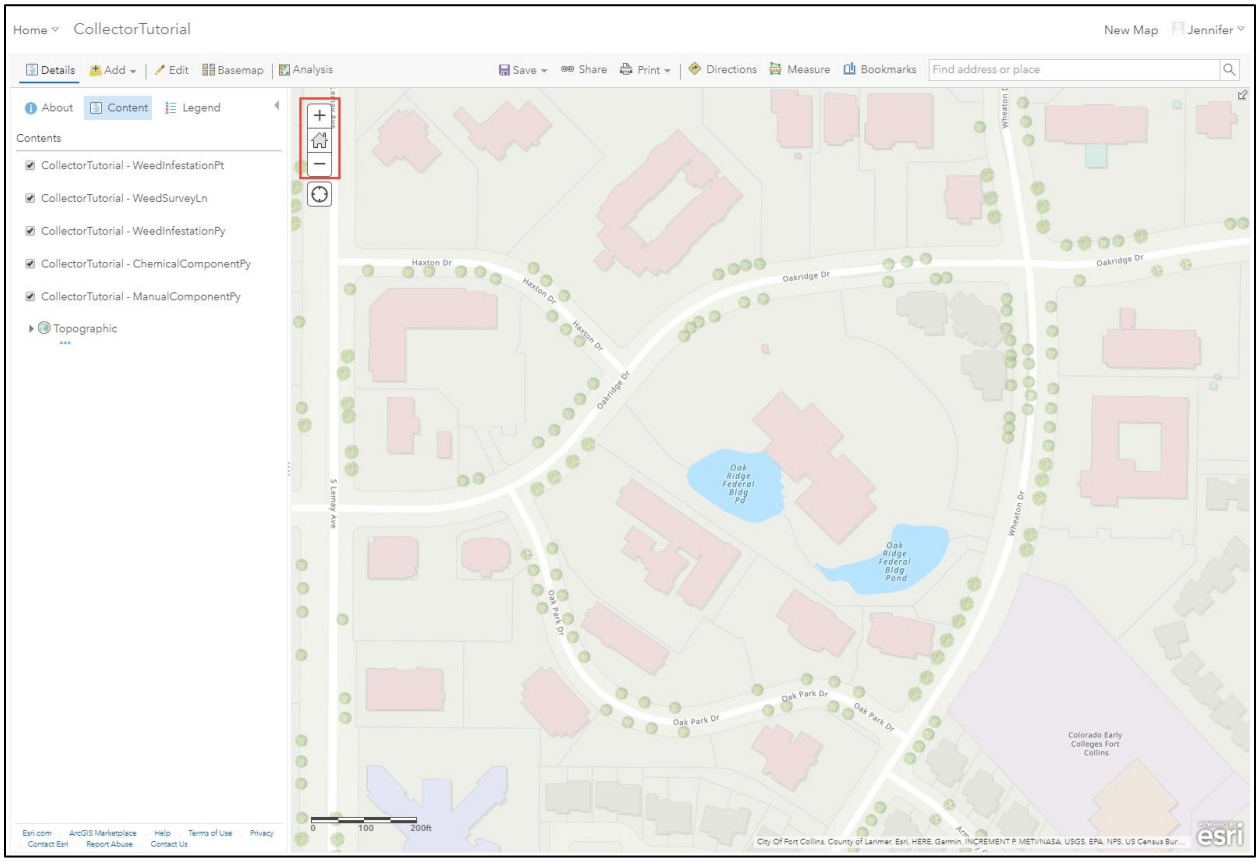


From the menu that opens, select “Add to new map with full editing control”.

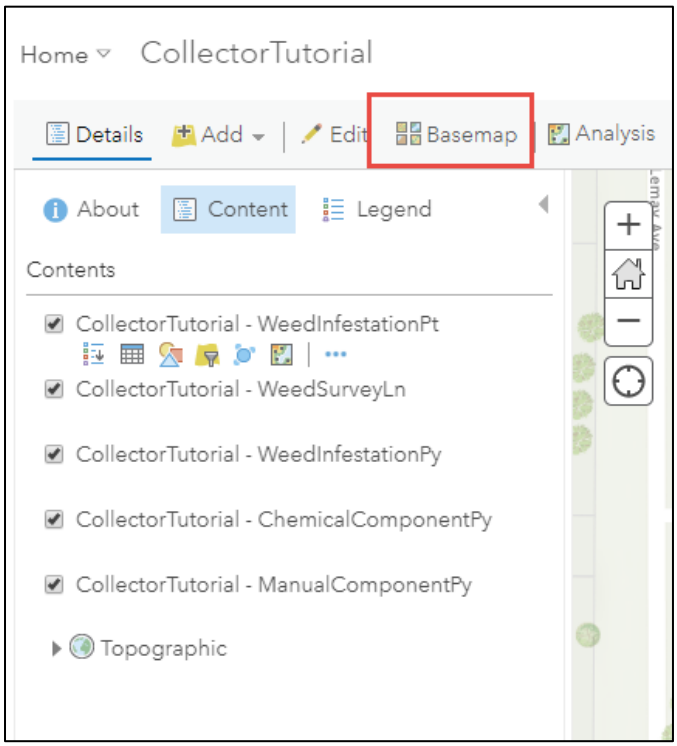
Step 11. The system may ask you to change styles first. You may bypass this by clicking the left point arrow at the top of the left side panel, or “Cancel” at the bottom of the panel.



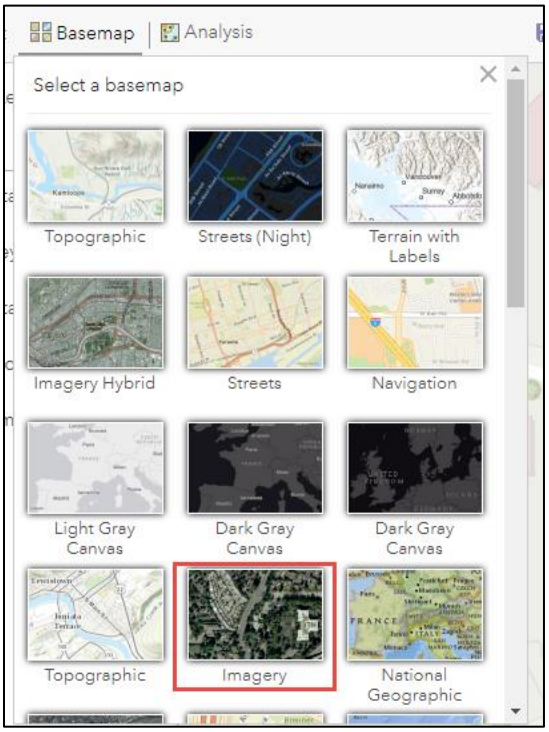
You may adjust the extent of the map using the buttons in the upper left hand corner of the map view, and may pan by clicking and holding somewhere inside the map view, and using the hand symbol that appears to drag the map until it is centered on the project area.



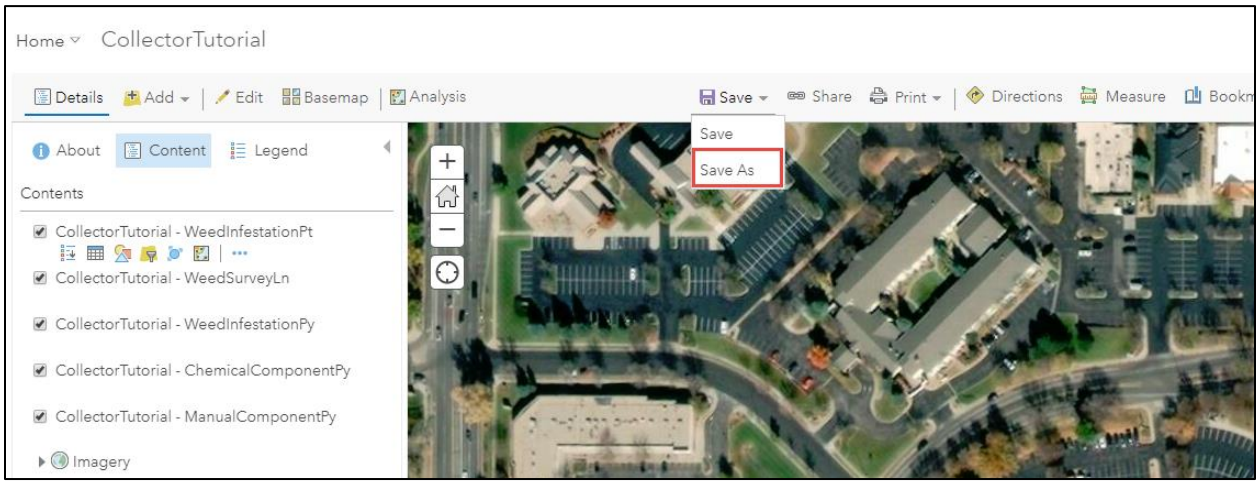
You may also change the basemap by clicking “Basemap” in the menu above the contents and the map view.



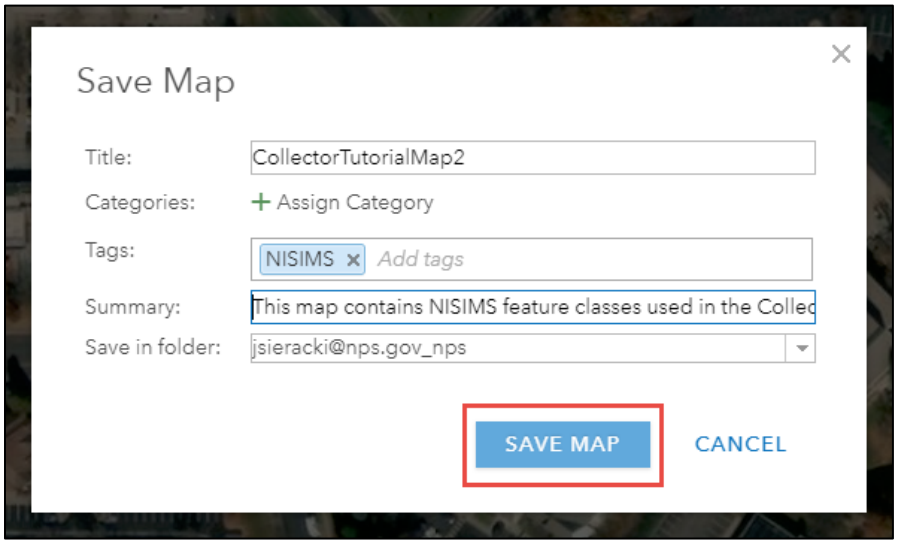
In the menu that pops open, select the basemap you would like to use.



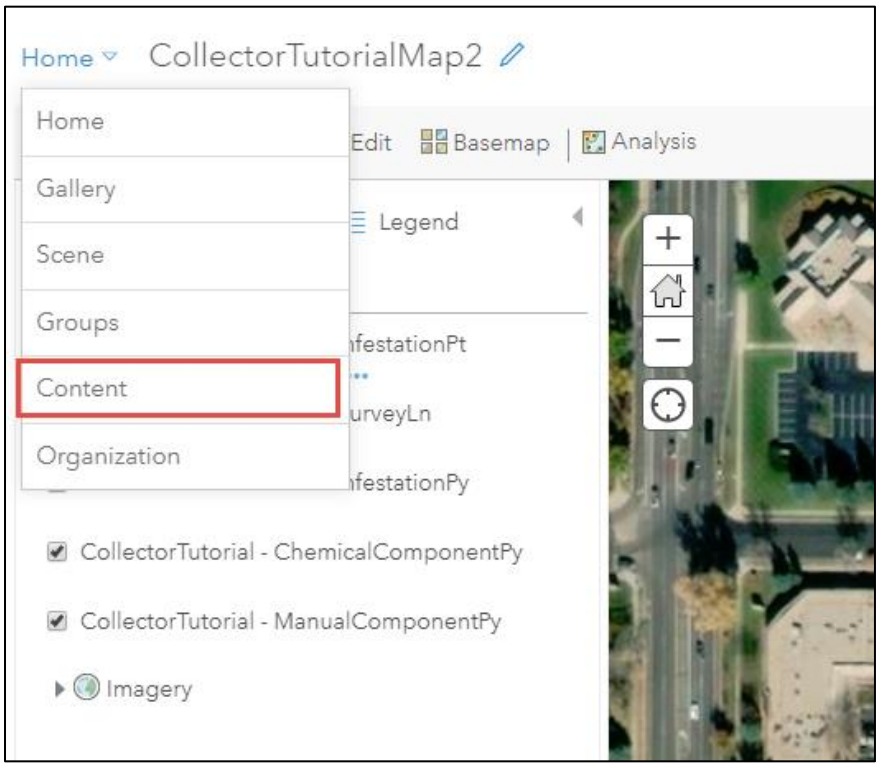
Step 12. Once you are happy with your map, click Save from the top menu bar and select “Save As”.



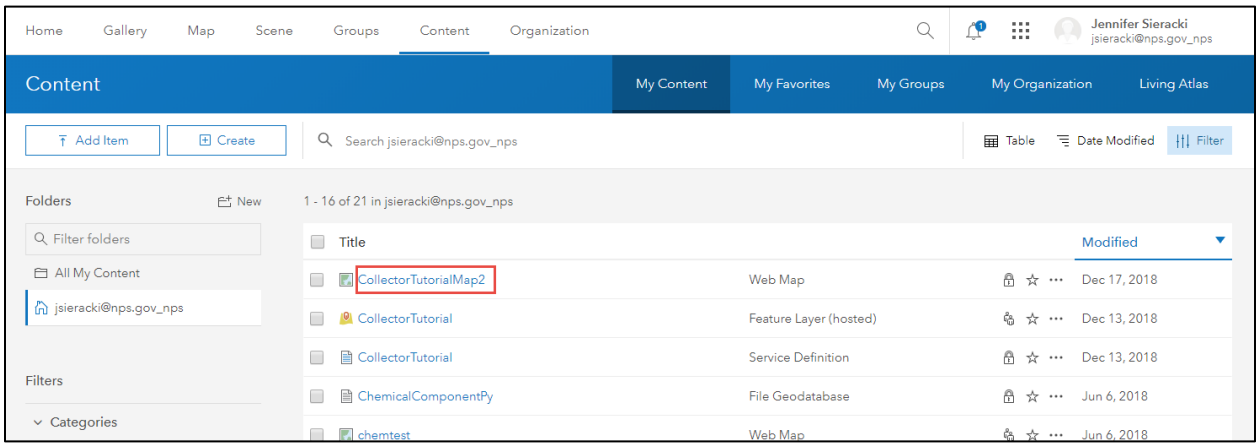
In the window that opens, enter a “Title”, “Tags”, and “Summary” for your map. Click “Save Map” when done.



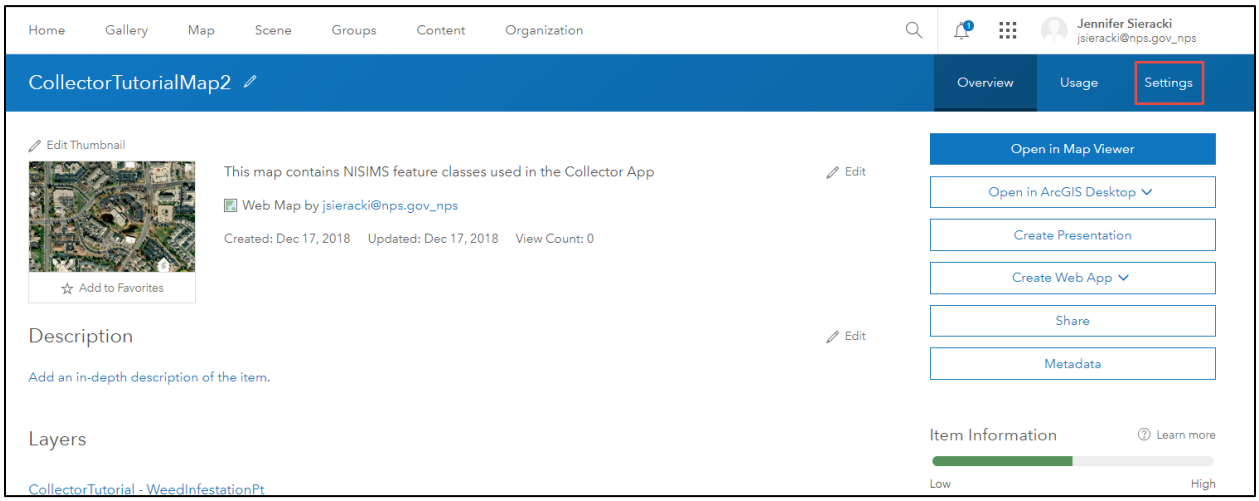
Step 13. Click “Home” in the upper left hand corner of the screen and select “Content” from the drop-down menu.



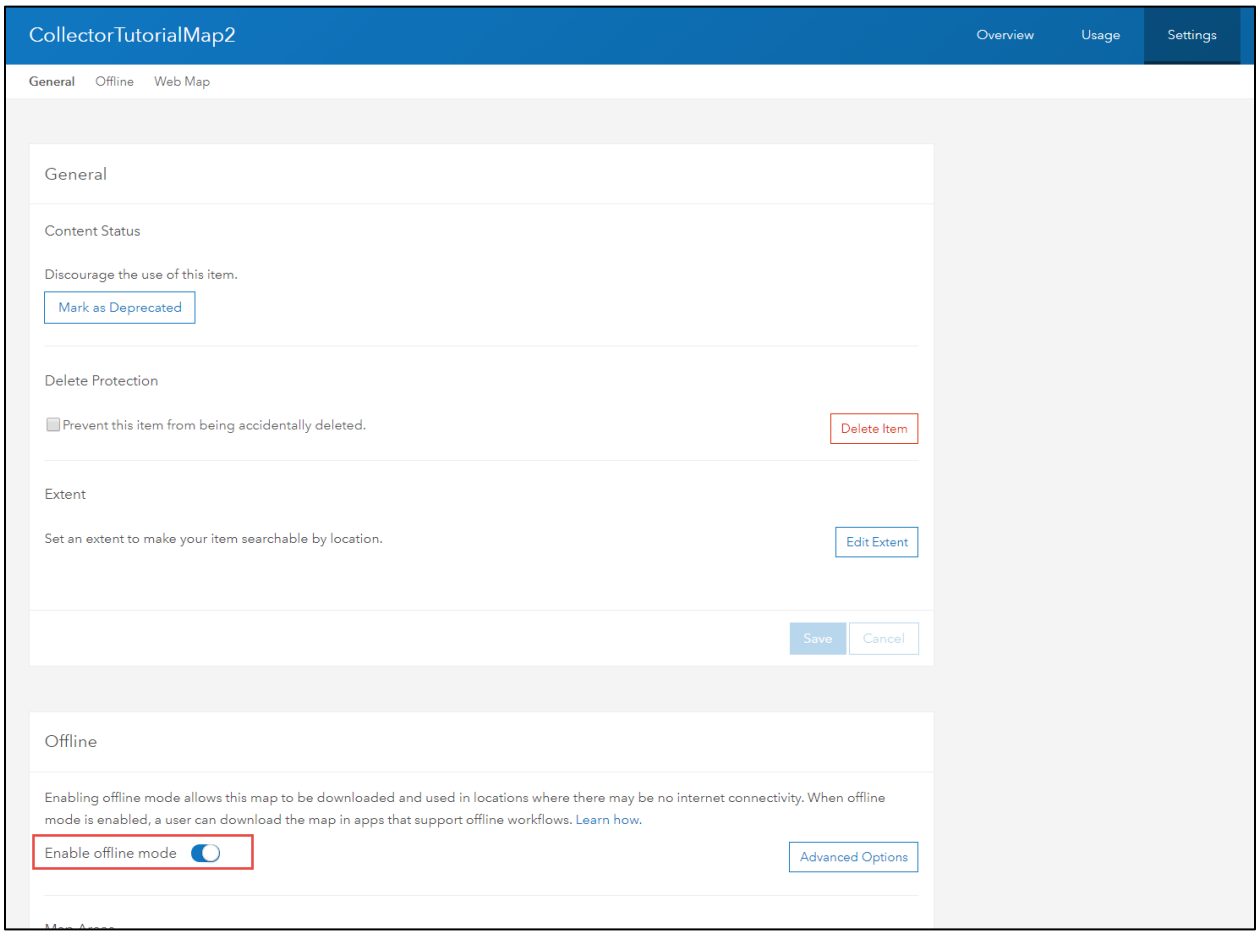
Step 14. From your “Content” page, click on the title of the web map you just created.



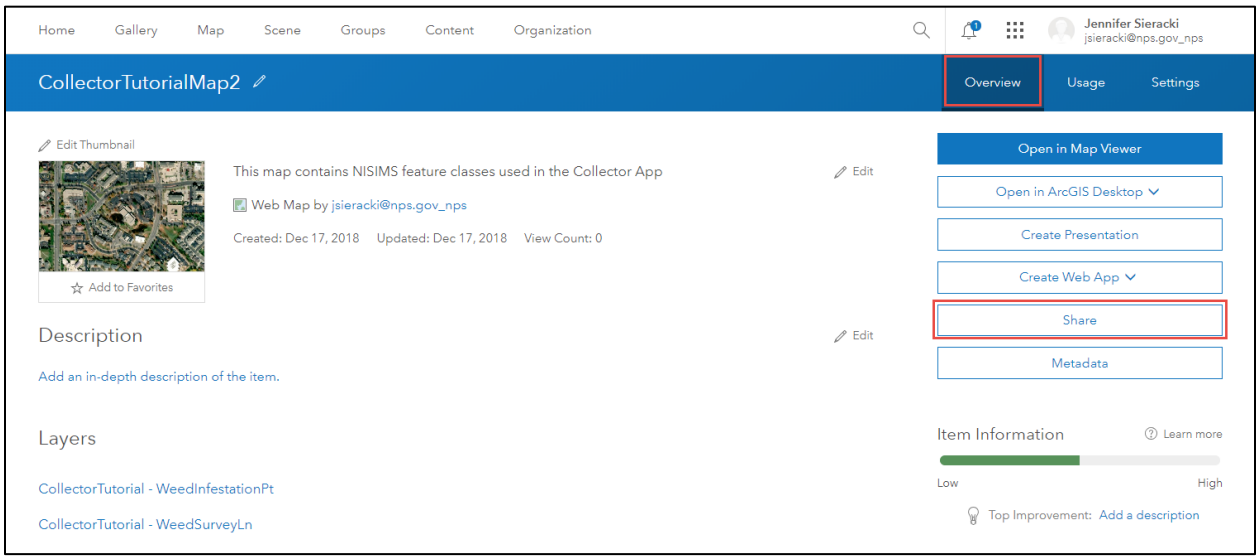
Step 15. Click the “Settings” tab in the upper-right corner of the new page that opens.



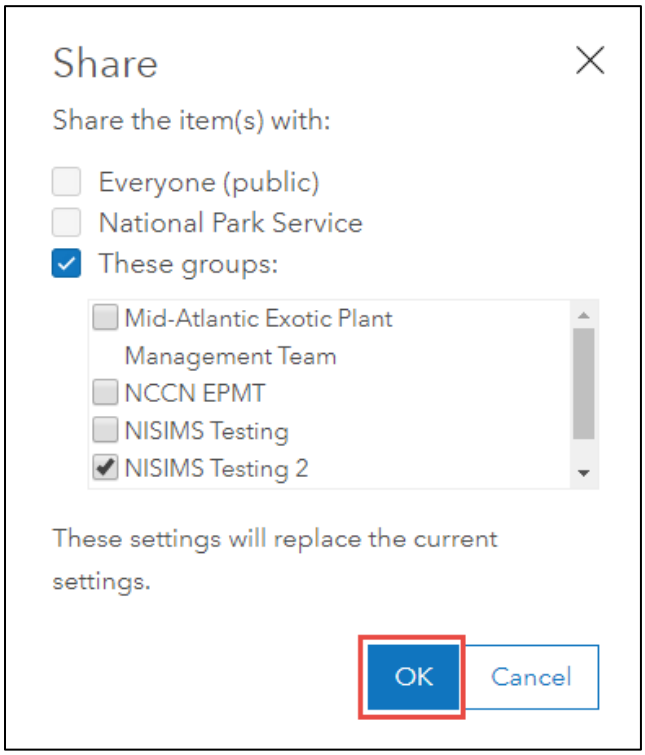
Under the “Settings” tab, ensure that the on/off control next to Enable offline mode is set to on (hint: it will be blue, with the white circle on the right.)



Step 16. Return to the map overview page by clicking the “Overview” tab. Click “Share” on the right side of the screen.



In the window that opens, check the boxes next to who you want to share your map. Be sure to check the group that you created. Click “OK” when done.



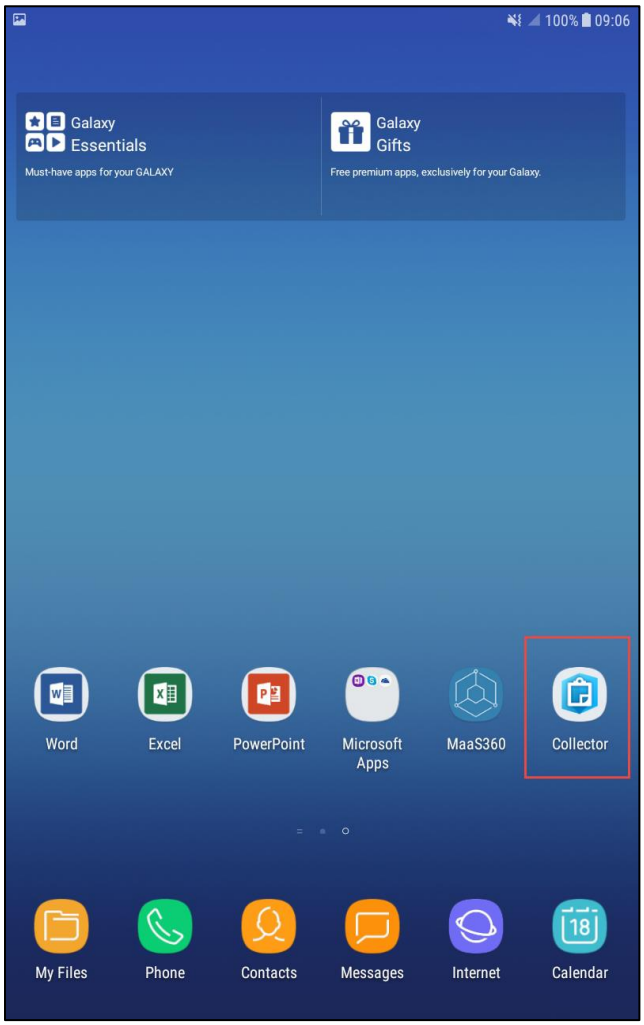
Your map is now available to work with in the field. You may check to ensure that it has been added to your group by selecting “Groups” from the menu at the top of the page, and selecting your group from the list.

4.4 Collecting Data in the Field with Collector

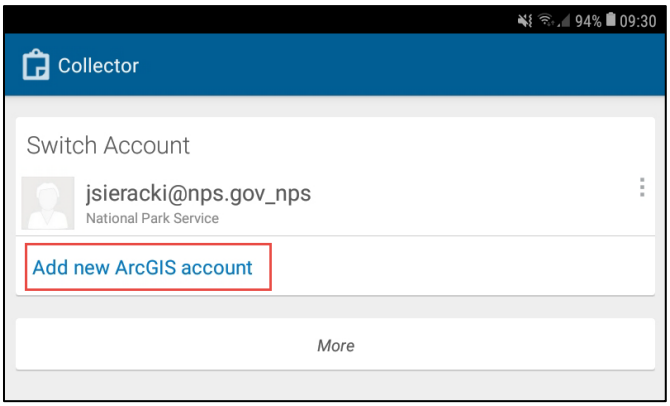
To begin data collection, you will need to first have access to WiFi or cell service. Once the map you created in the above steps is downloaded onto your device, you may go offline. You will need to have WiFi or cell service access once you are ready to sync your data again. The following is demonstrated on an Android tablet. Views and menus may appear different on your own device.

Instructions: Collect NISIMS data using Collector for ArcGIS.

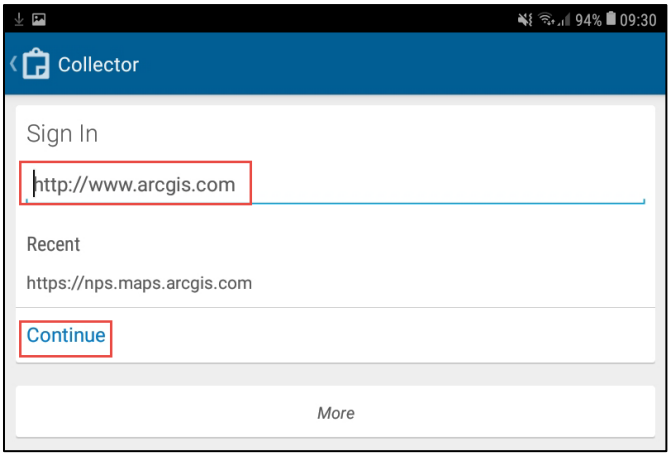
Step 1. (**The following steps must be completed while online**). On your device, start Collector for ArcGIS.



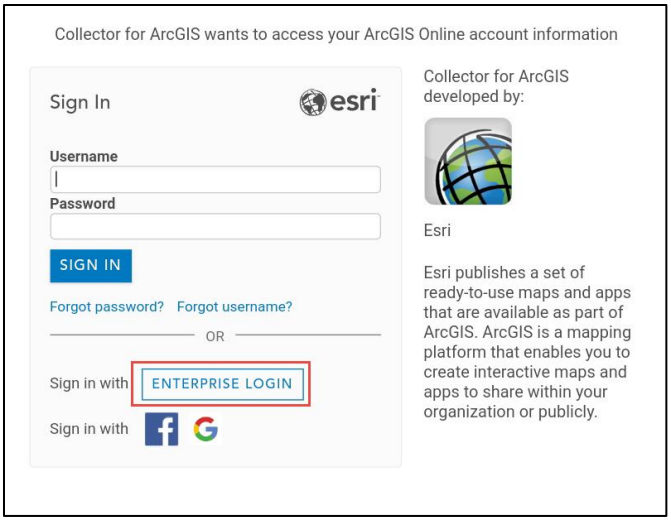
If this is your first time using Collector, you will need to select “Add new ArcGIS account”.



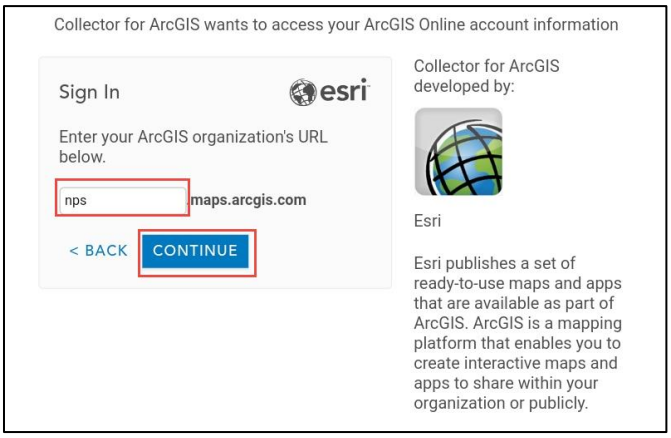
Enter “http://www.arcgis.com” under “Sign In” if it is not already populated. Click “Continue”.



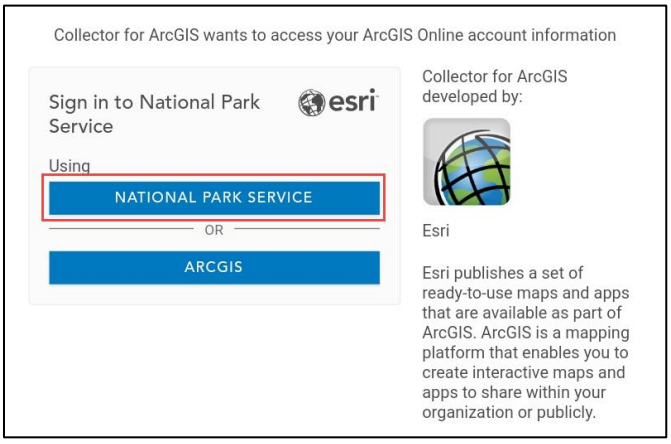
Click “Enterprise Login”.



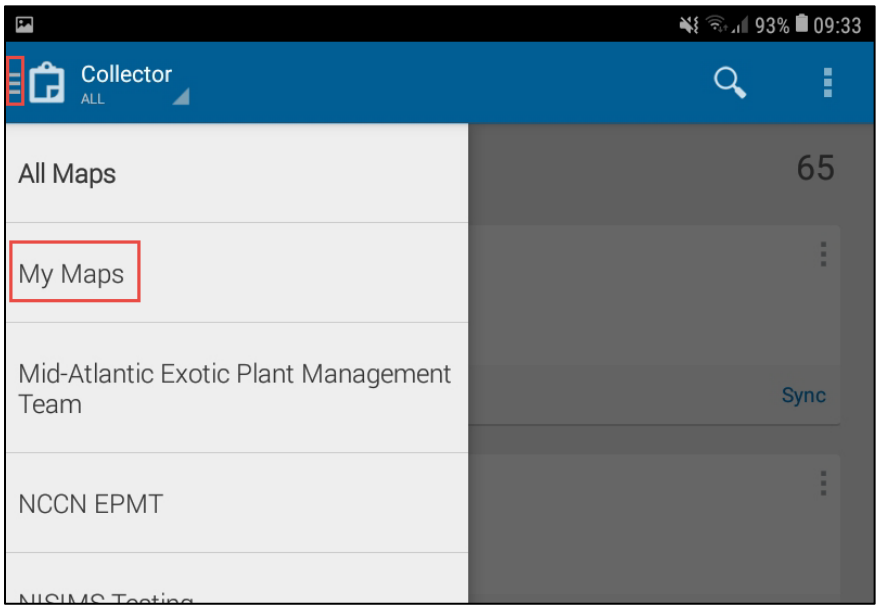
Enter NPS in the box next to ".maps.arcgis.com" and click continue.



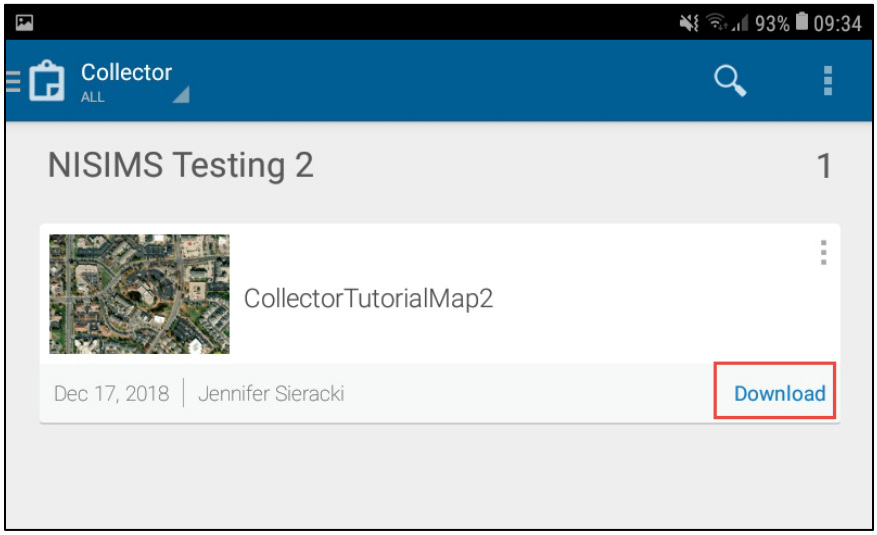
Finally, click "National Park Service". A window will open asking you to enter your user name and password. Enter your Active Directory login info (<<user name>>@nps.gov and password).



Step 2. If you do not see your map upon starting Collector, open the menu in the upper left screen (looks like three lines that have been cut off). Select either “All Maps” or the group that contains the maps you created in the steps above.



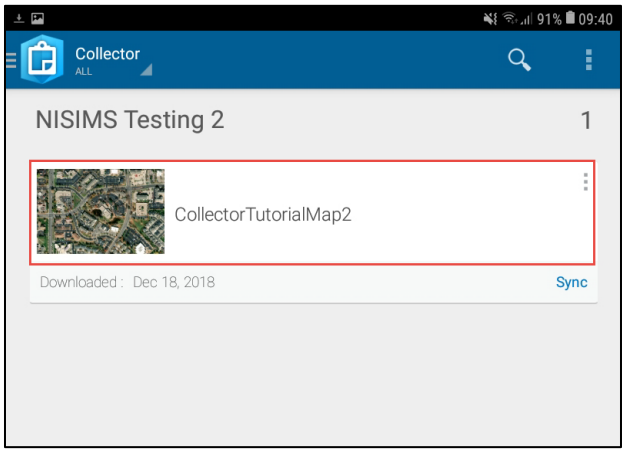
Step 3. In the list that appears, find the map that you created in the previous steps, and click “Download”.



If you have previously used Collector on your device, the next window will ask you to choose a basemap. Using previous basemaps will save you time during the download, but may not match the extent of your new map.

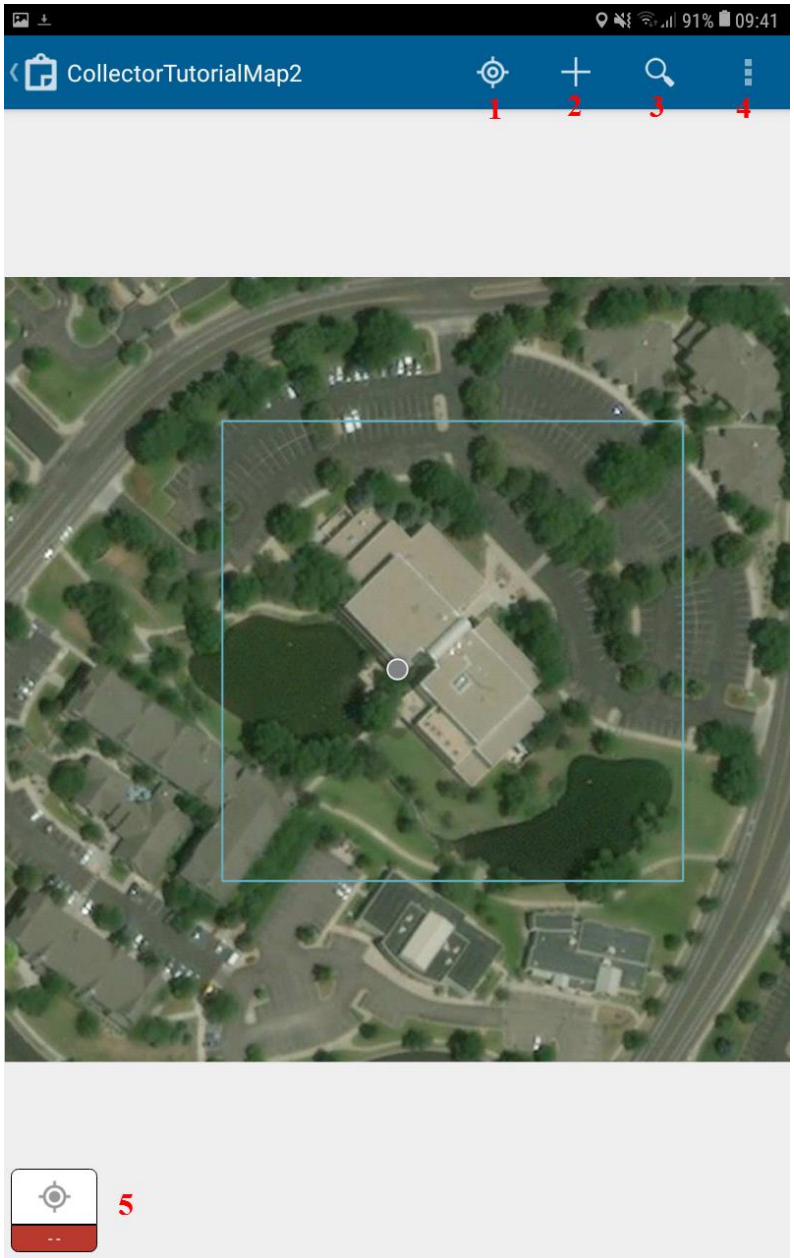
A screen showing your work area will open. You may adjust your work area within the blue box by drawing your fingers closer together on the screen or spreading them further apart. You may also move the work area around the screen by dragging a finger across the screen. Once satisfied with your work area, select “Download” at the bottom of the screen.

Depending on the size of the map and connection speed, it may take a few moments for the map to download onto your device. Once the download is complete, click on the map in the list to begin collecting data.

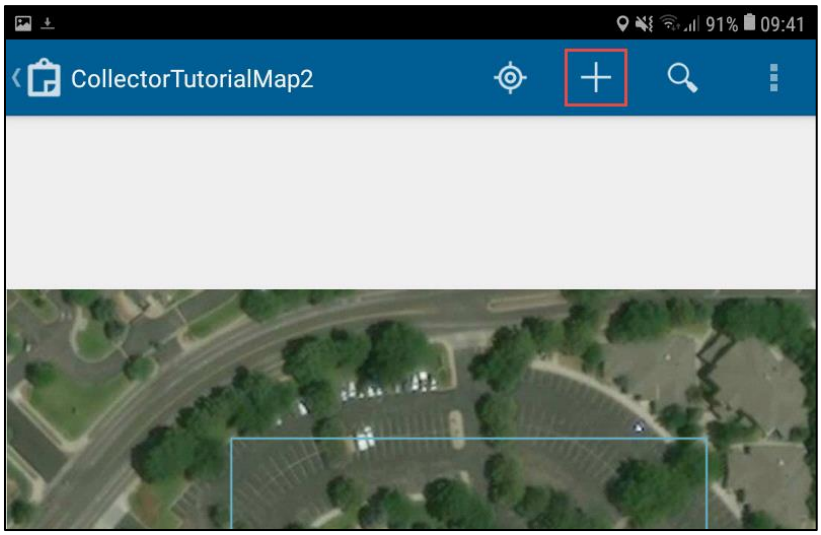


Step 4. The map view window will open. You will collect data from here. **You may go offline while collecting data**. The following features have been numbered in the photo:

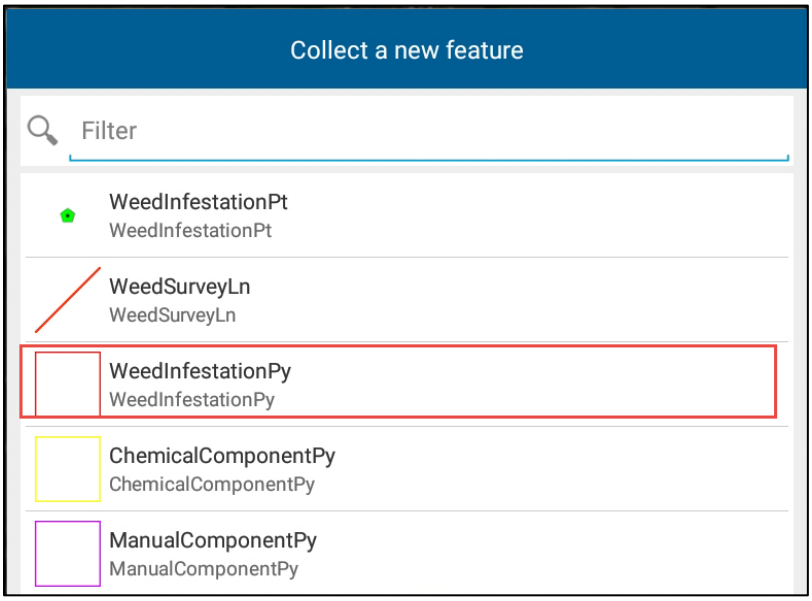
1. My Location—If the circle is filled in, it means the map is panning to keep your location centered. Tap this button to center on your location.
2. Collect New—Lets you collect new data for any of the layers added to the map.
3. Search—Search for a location or an address.
4. More—Provides options to change basemaps (if downloaded) and turn layers on and off.
5. Receiver information.



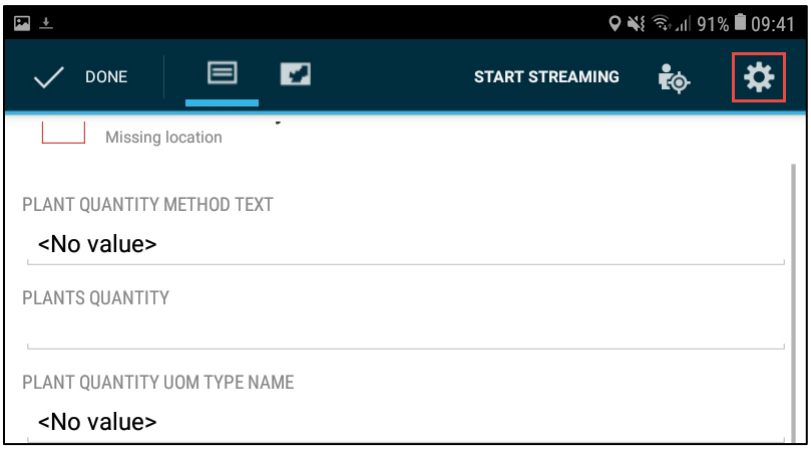
To begin collecting data, click the “Collect New” button at the top of the screen.



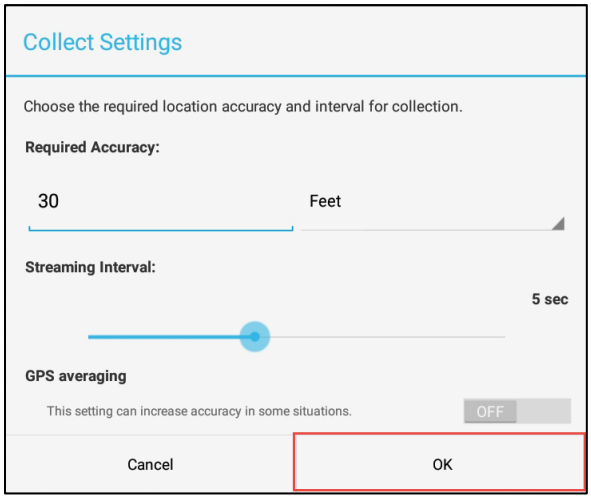
In the window that opens, select the layer for which you are collecting data. For this exercise, we added data to the WeedInfestationPy layer.



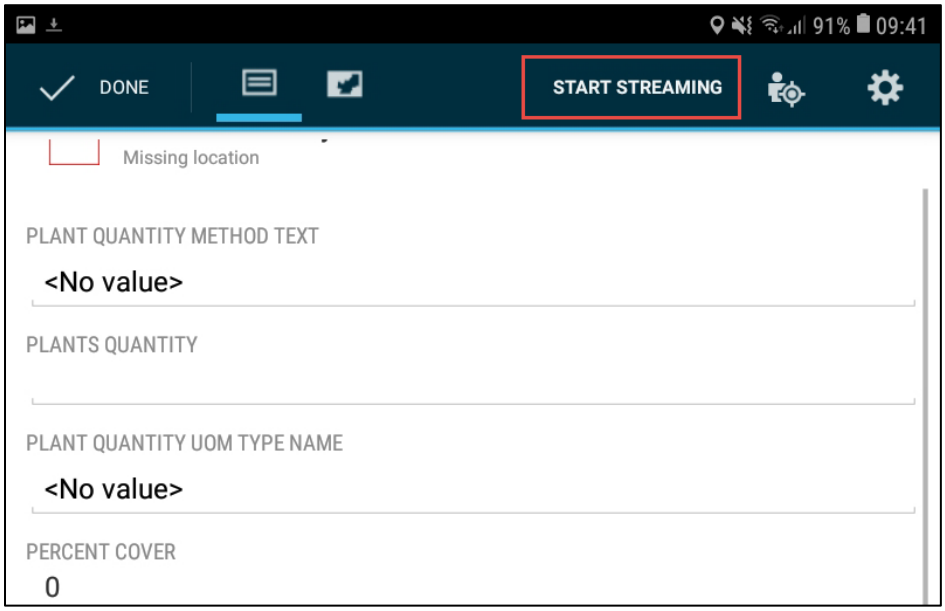
In the upper right hand corner of the screen that opens, click the “Settings” button.



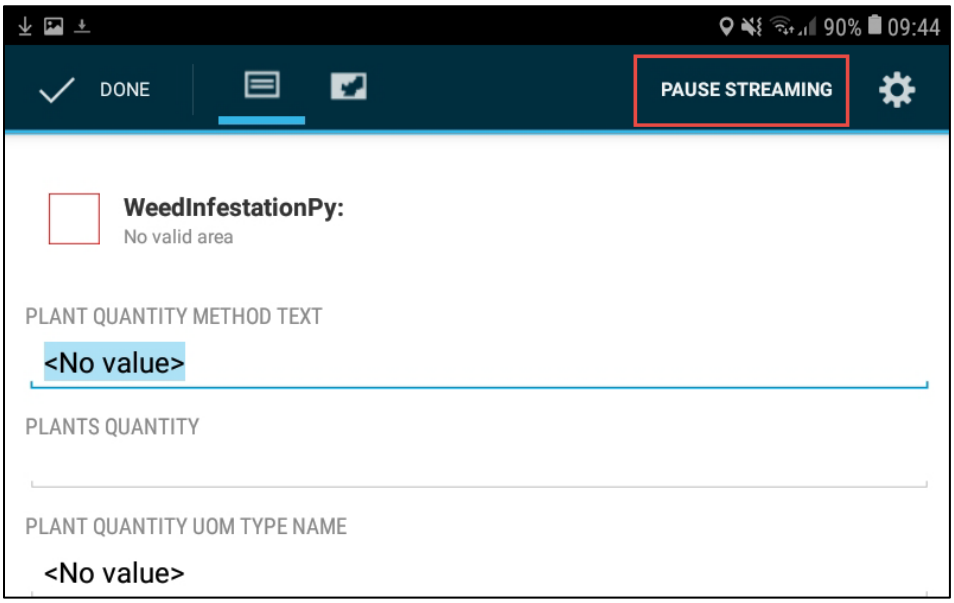
In the window that opens, set your GPS settings and click OK.



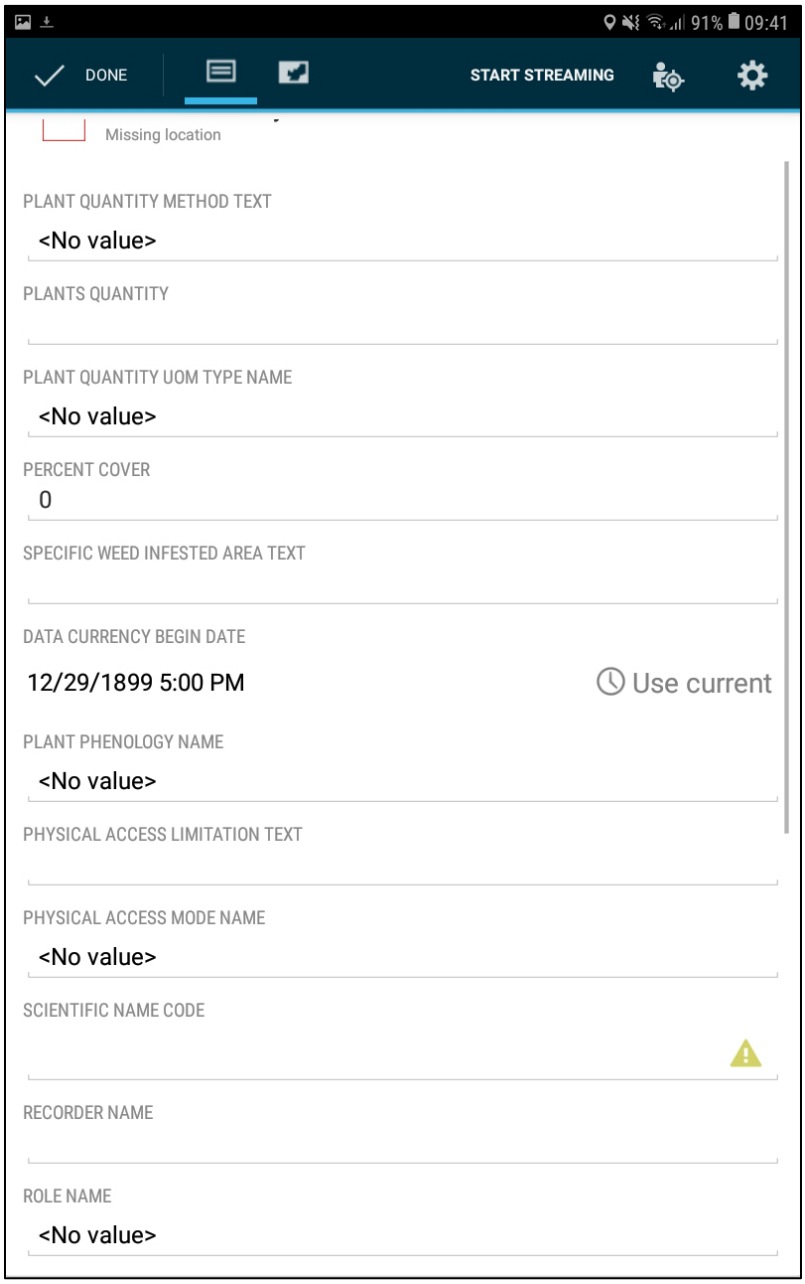
You may begin collecting spatial data either before or after you have entered the attribute data. When you are ready to collect your point, line, or polygon, click “START STREAMING” at the top of the screen.



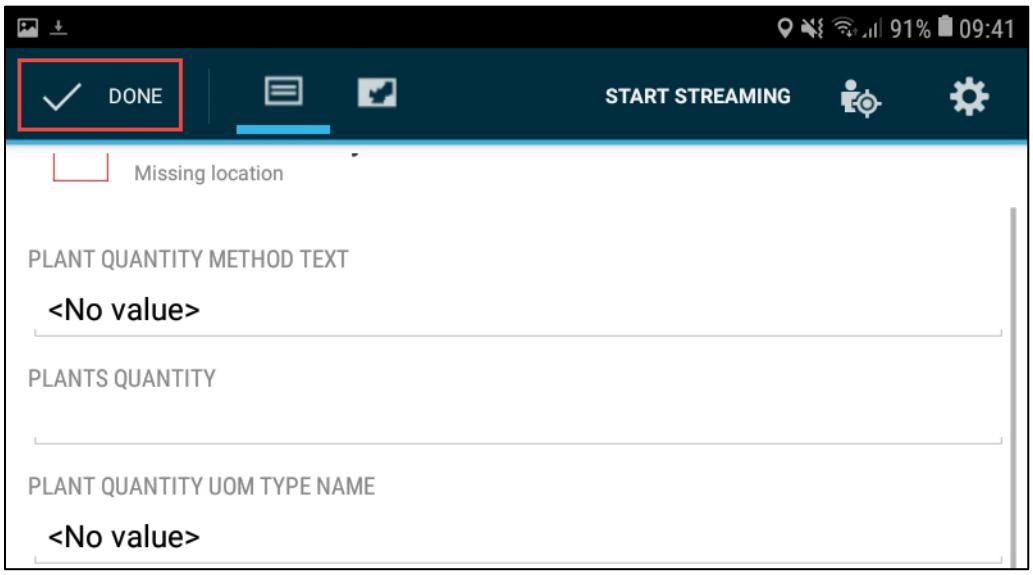
Once you are done walking your point, line, or polygon boundary, click “PAUSE STREAMING”. You may also pause streaming at any time during your data collection if you need to stop or are going over especially rough terrain.



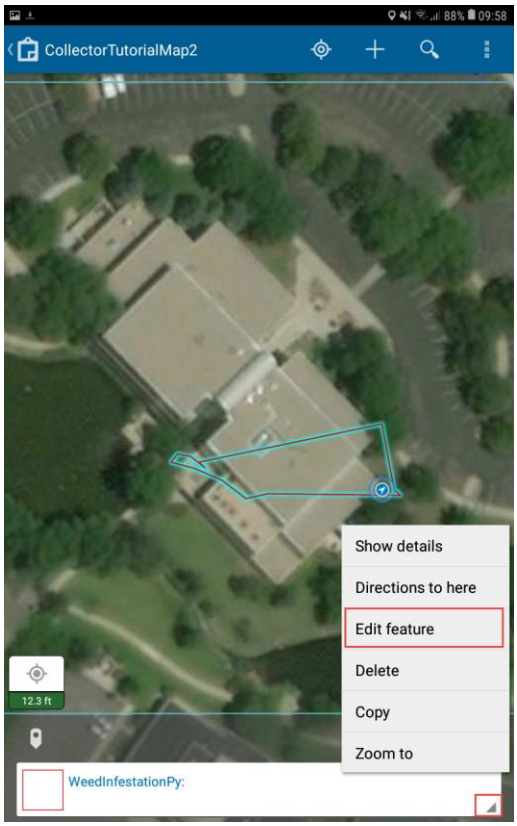
To add attributes to your data, simply click in each field and either select a value from a drop-down list, type a value using the keypad that opens, or select from a calendar. With dates you may also click the “Use Current” option to populate the field. Some required fields will have a yellow warning triangle next to them. Be sure to populate these. Required dates will be populated with a default value. You will not be able to save your feature until all required fields are populated (i.e. a “Popup contains invalid value” error may popup).



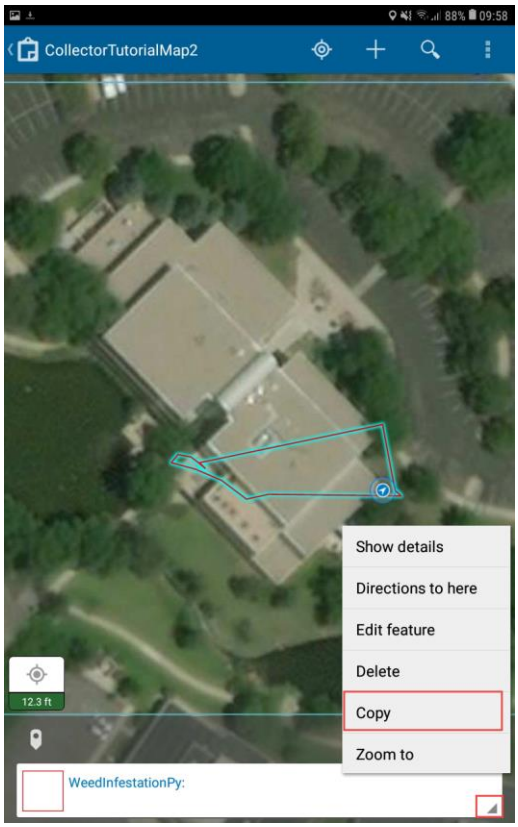
Once your feature is complete (i.e. both spatial and attribute data collected), click “Done” in the upper left hand corner of the screen.



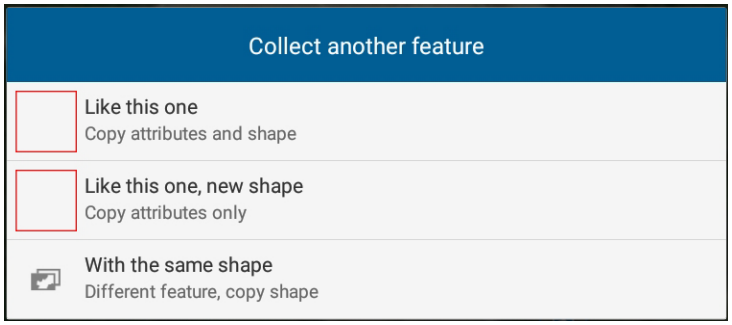
To edit data that has already been entered, tap the feature you wish to edit with your finger so that it turns cyan. Click the arrow in the lower right hand corner of the screen, and select edit. The attribute window from above will re-open. Click “Done” when edits are complete.



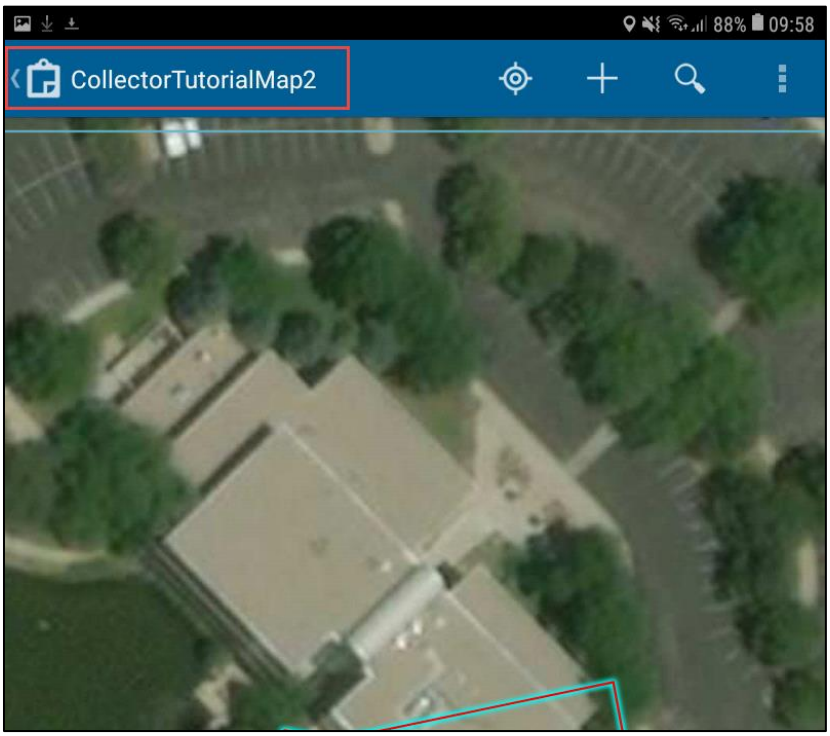
To copy features or attributes, select “Copy” from the same menu above.



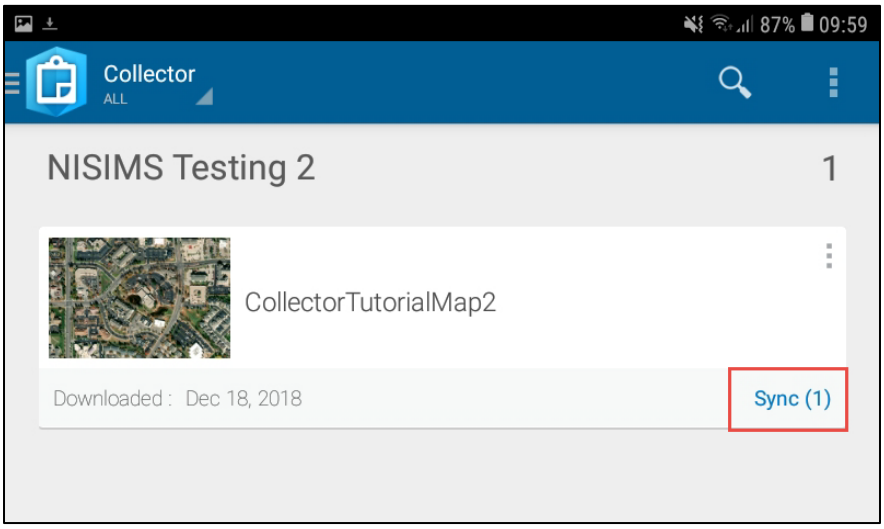
A window will open with the options to copy the feature and the attribute. You may copy the attributes and shape of the feature to create a complete copy of the feature. You may also copy only the attributes, which will allow you to create a new feature in a new location within the current layer (e.g. good to use when species, herbicide, etc. are the same for the new feature). Or you may copy the shape of the feature, and add to any of the other layers included in the map (e.g. useful when you want to collect both infestation and survey data using the same feature).



Step 5. Once you are done collecting data, click the map name in the upper left hand corner of the screen.



Step 6. When you are again connected to WiFi or cell service, you may sync your data so all changes upload to ArcGIS online. The number of changes made will appear in parentheses next the “Sync” option.



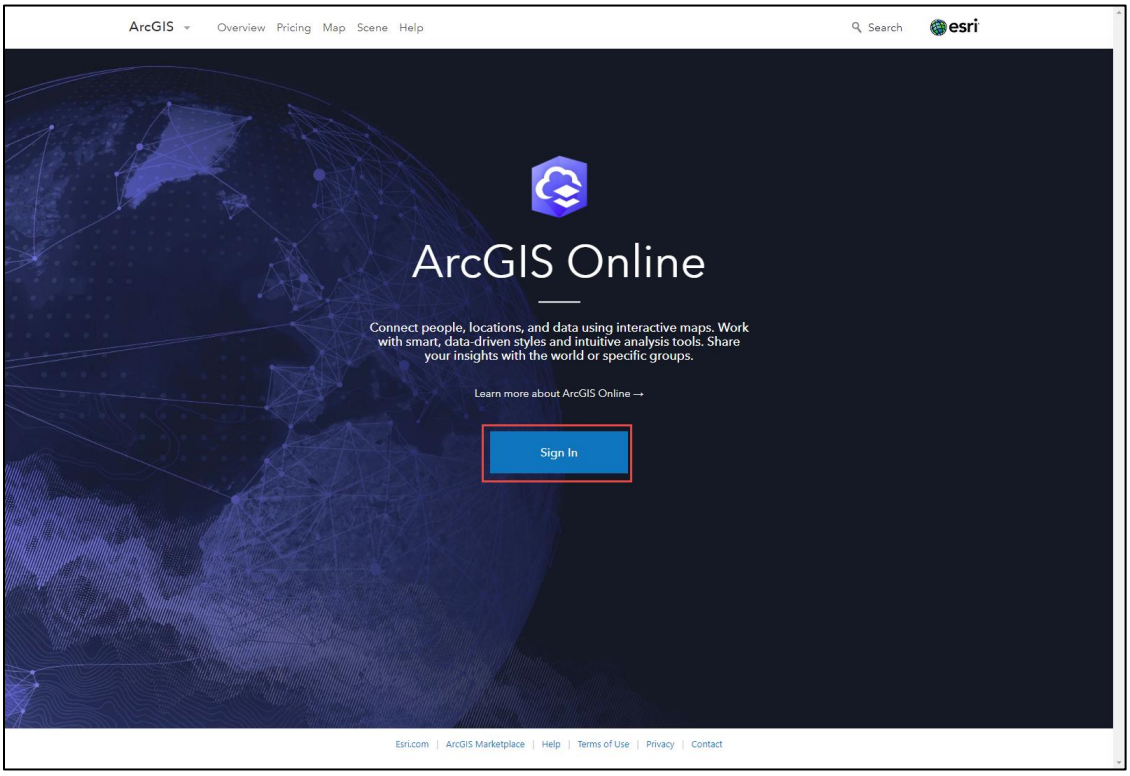
Once complete, your data will be available for export.

4.5 Exporting NISIMS Layers from ArcGIS Online

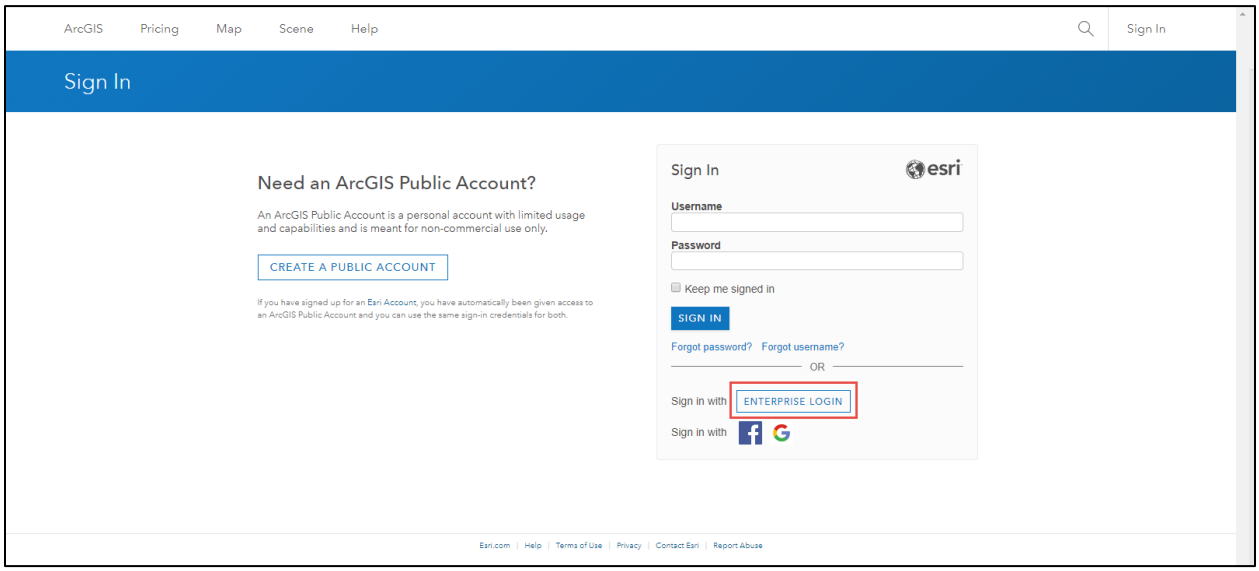
Now that you have collected your data in the field, you will need to export it into a file geodatabase before uploading it to the NISIMS website. You will need to quality check your data prior to uploading it to NISIMS; however, it may remain in the export format.

Instructions: Export your NISIMS data to a file geodatabase from ArcGIS Online.

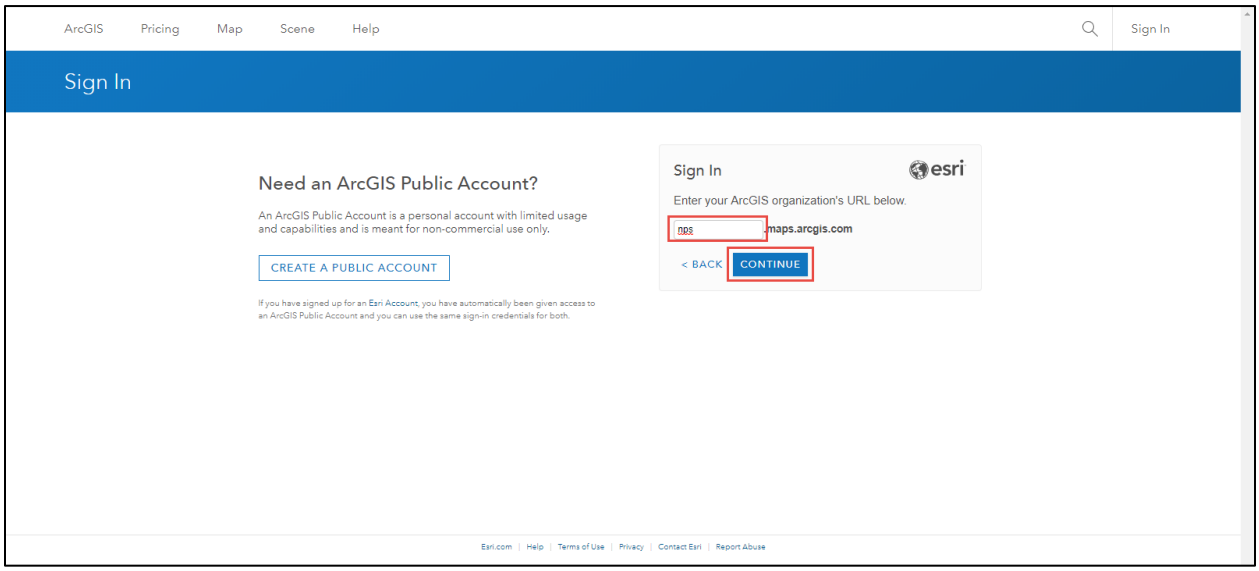
Step 1. Go to www.arcgis.com, and click "Sign In".



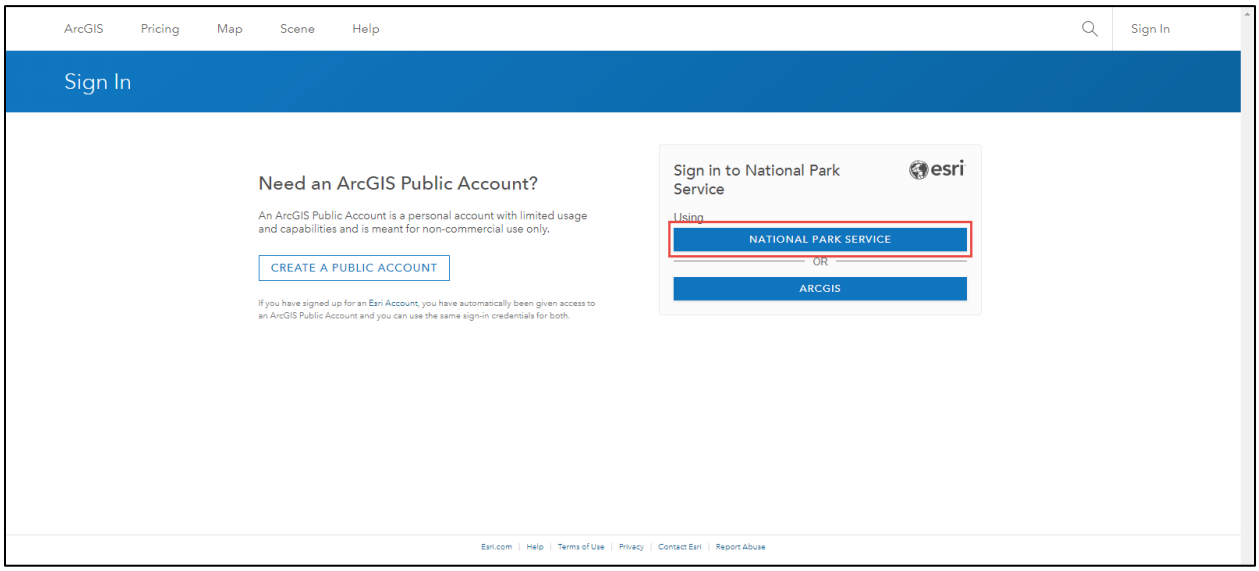
On the right-hand side of the screen that opens, click the “Enterprise Login” button.



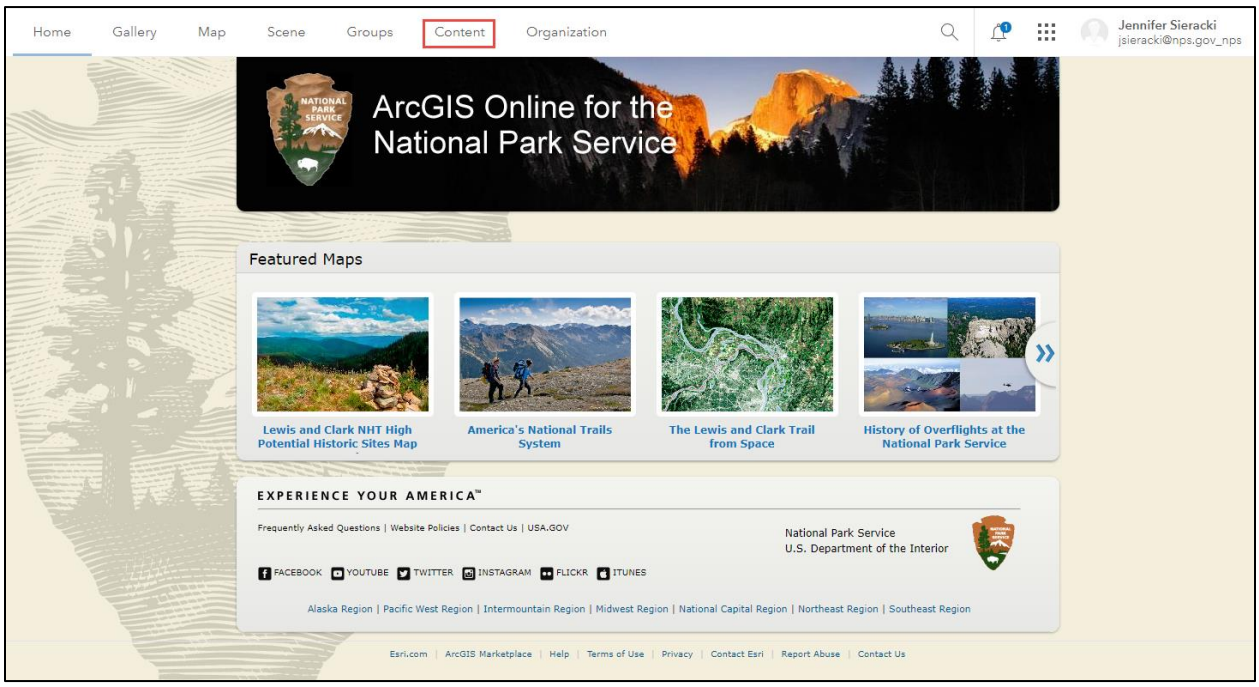
Enter “nps” in the box under “Enter your ArcGIS organization’s URL below.”, and click “Continue”.



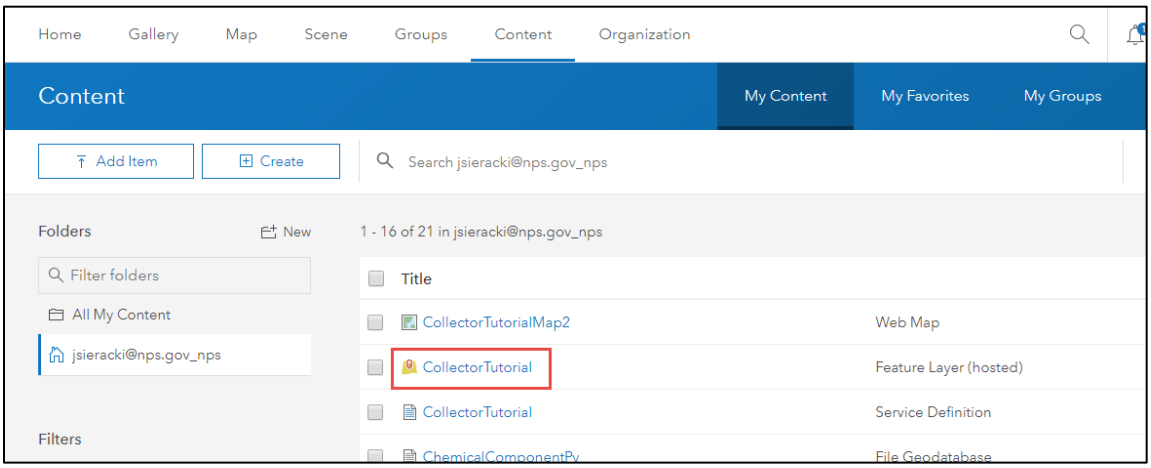
Click “National Park Service” on the next page.



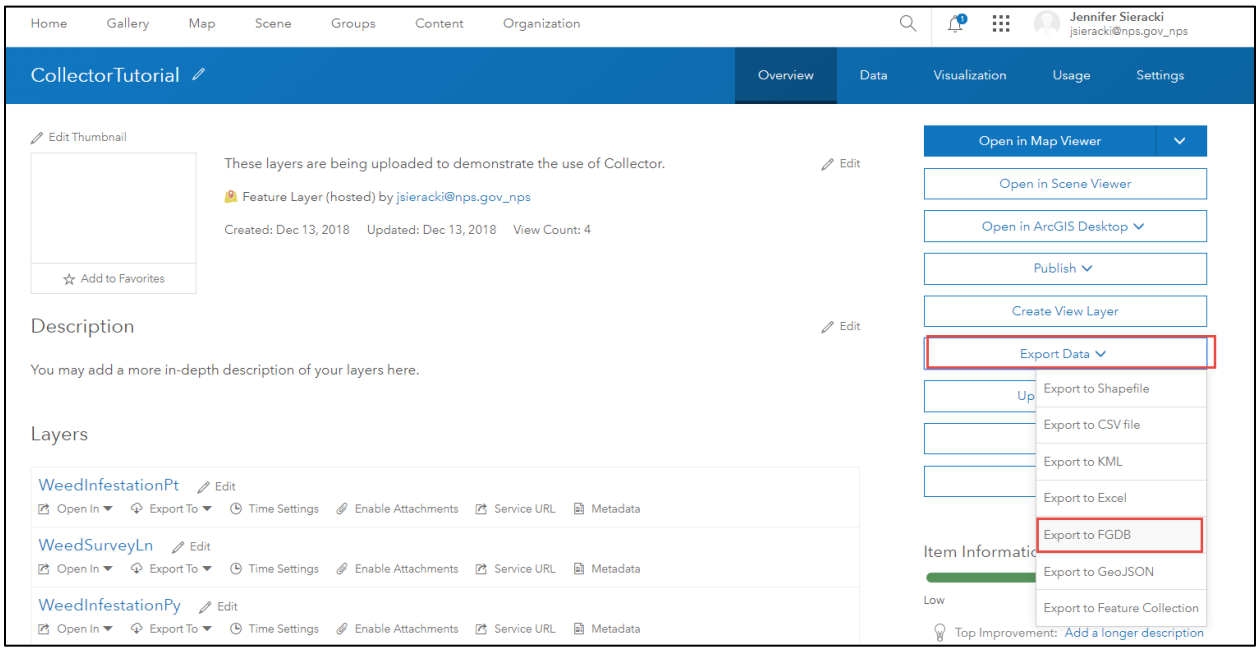
Step 2. Once logged in, select “Content” from the top of the webpage.



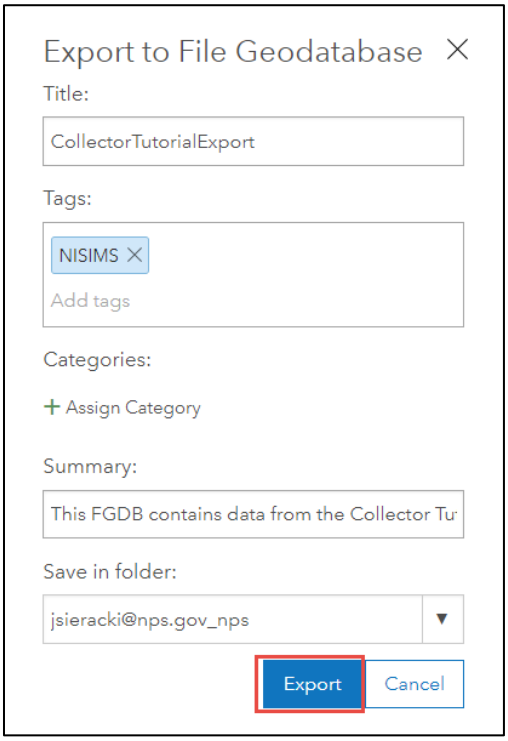
Step 3. From the list of your content, select the “Feature Layer” you edited in the previous instructions using Collector. Note: Do not select the “Web Map”.



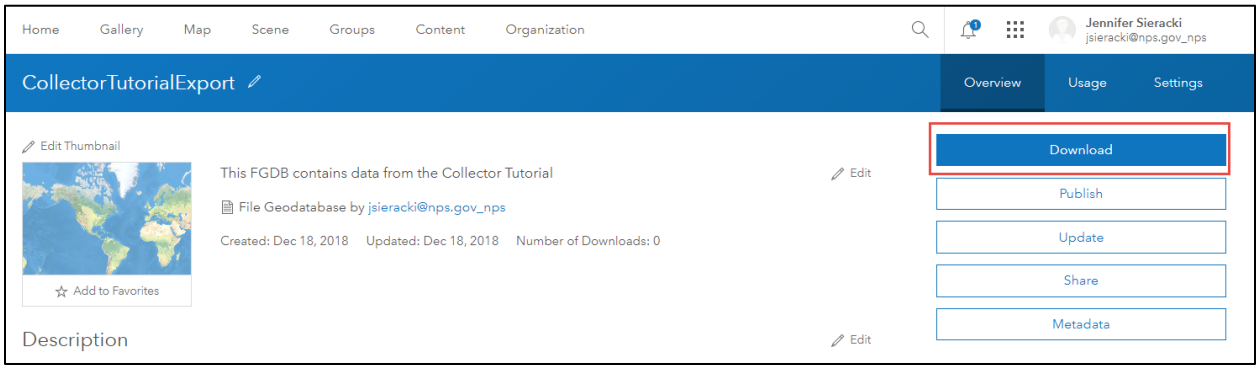
Step 4. Click “Export Data” on the right hand of the screen, and select “Export to FGDB”.



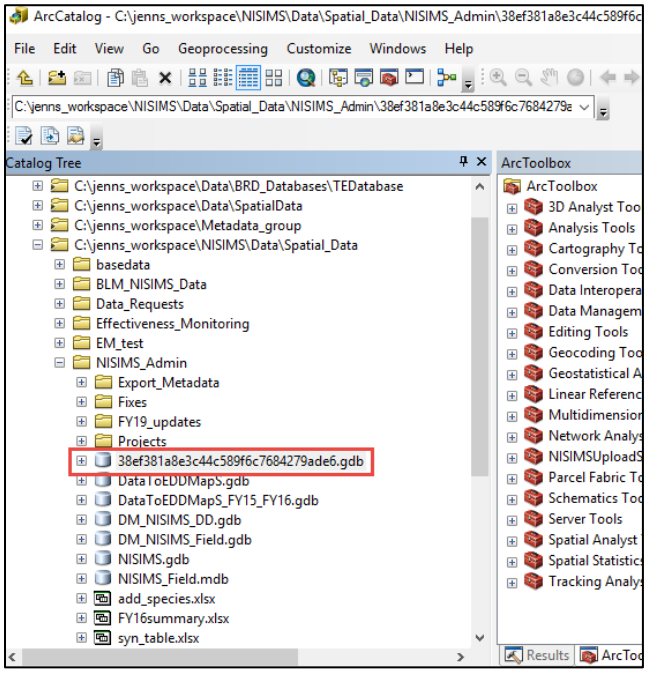
In the window that opens, include a title, tag, and summary of the data being exported. Click "EXPORT" when complete. This may take several minutes depending on data size and connection speed.



Step 5. Once the export is complete, its web page will automatically open. Click "Download" on the right side of the screen.



The data will download as is normal for your browser. The file geodatabase will be in a ZIP file that will need to be unzipped in order to quality check your data. Once unzipped, you may change the file name to something more descriptive. The data may be uploaded after quality checking is complete.



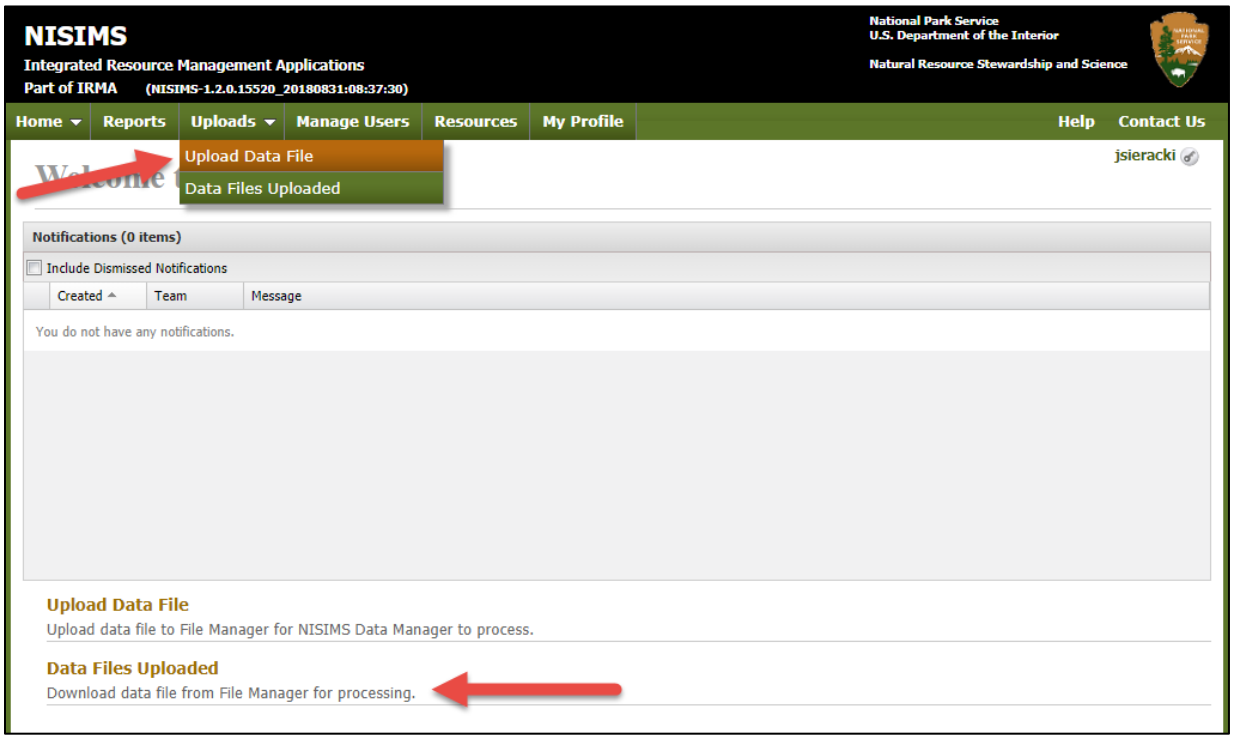
5. NISIMS Web Interface

5.1 Uploading Data

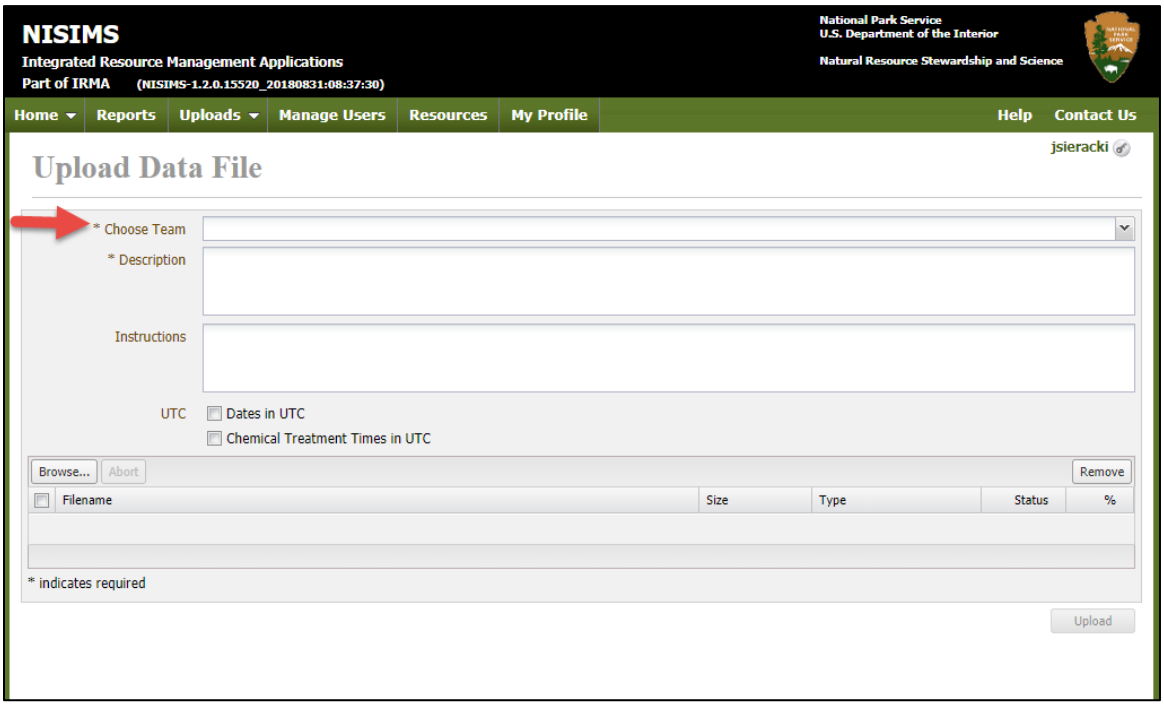
The NISIMS web interface has been designed to allow EPMT and park staff to upload data to the NISIMS SDE geodatabase and to create reports from uploaded data for each of the parks they manage for exotic plants. In order to meet reporting deadlines, data should be uploaded at least once a month during the field season. All exotic plant data that is uploaded to the NISIMS web interface is required to be in one of the data structures described in this user guide. All files should be zipped prior to uploading. Instructions for uploading data to the NISIMS web interface follow:

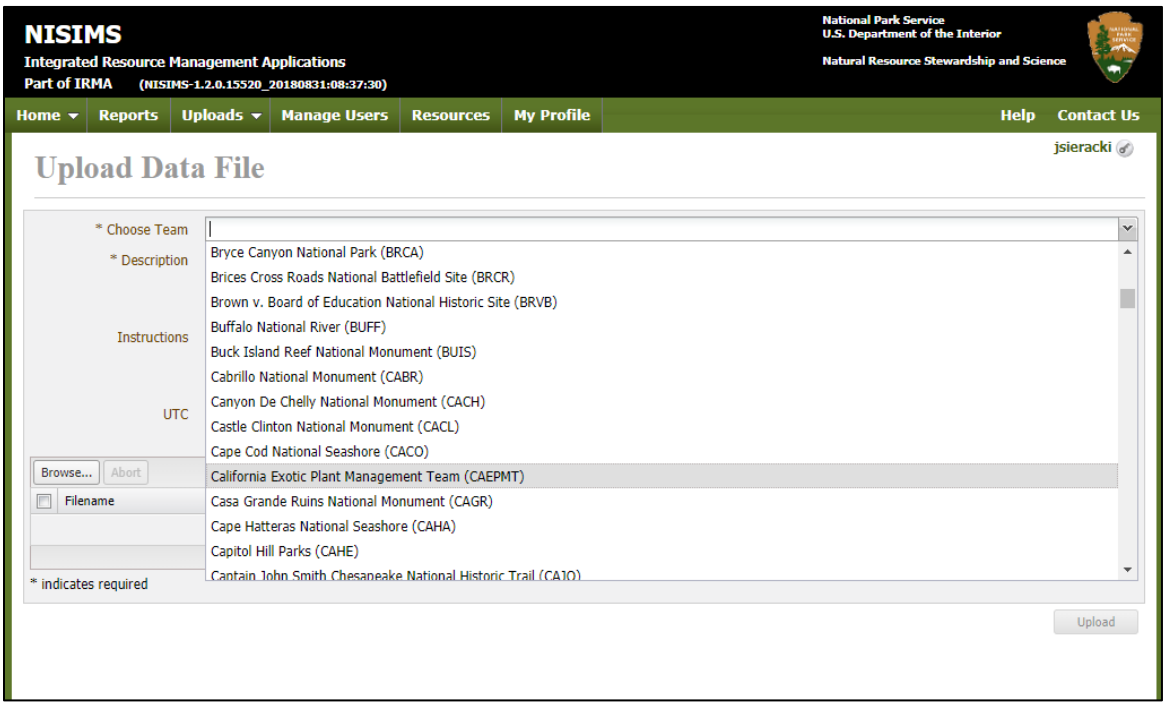
Instructions: Upload a data file to the NISIMS web interface.

Step 1. Select "Upload Data File" from your home page or from the "Uploads" menu.

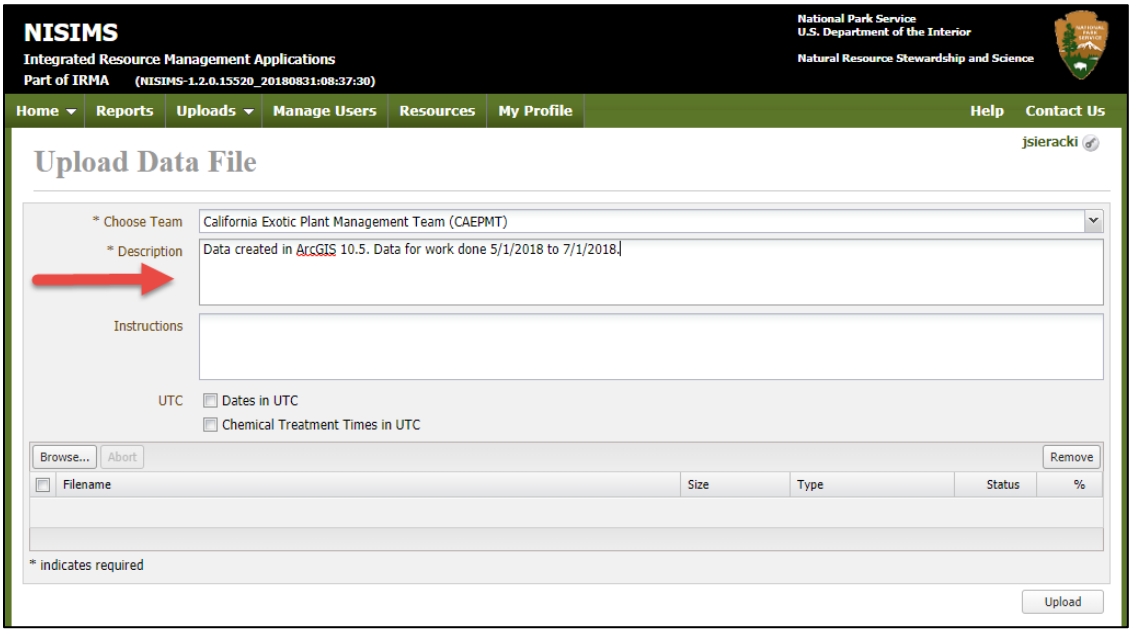


Step 2. Select the team for which you are uploading data from the drop down menu.

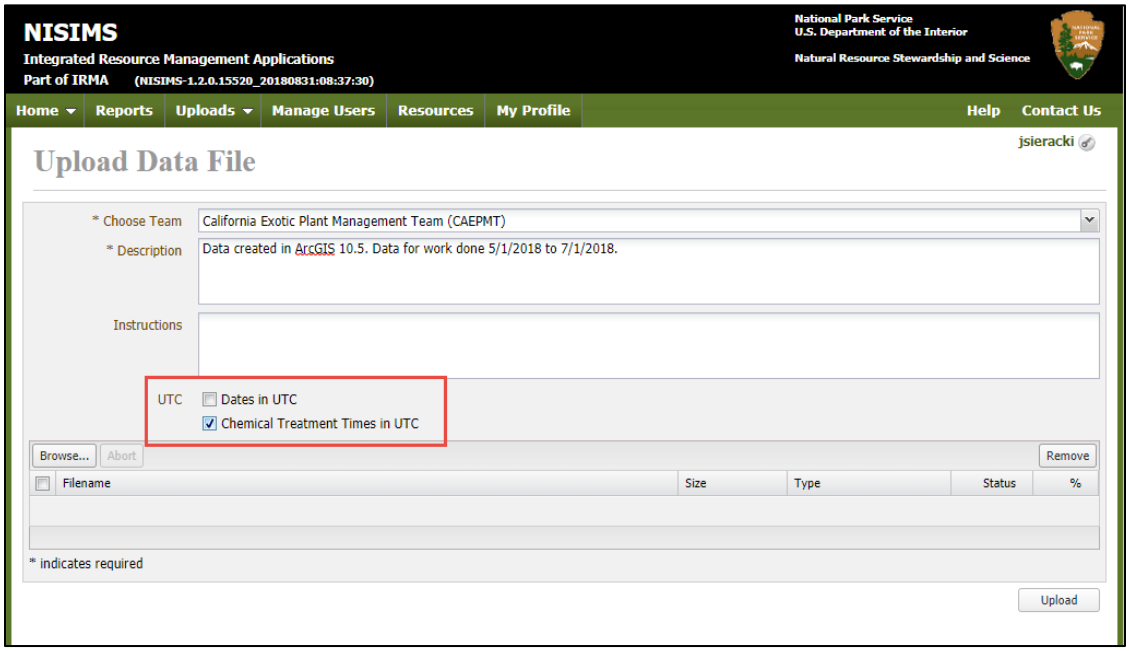




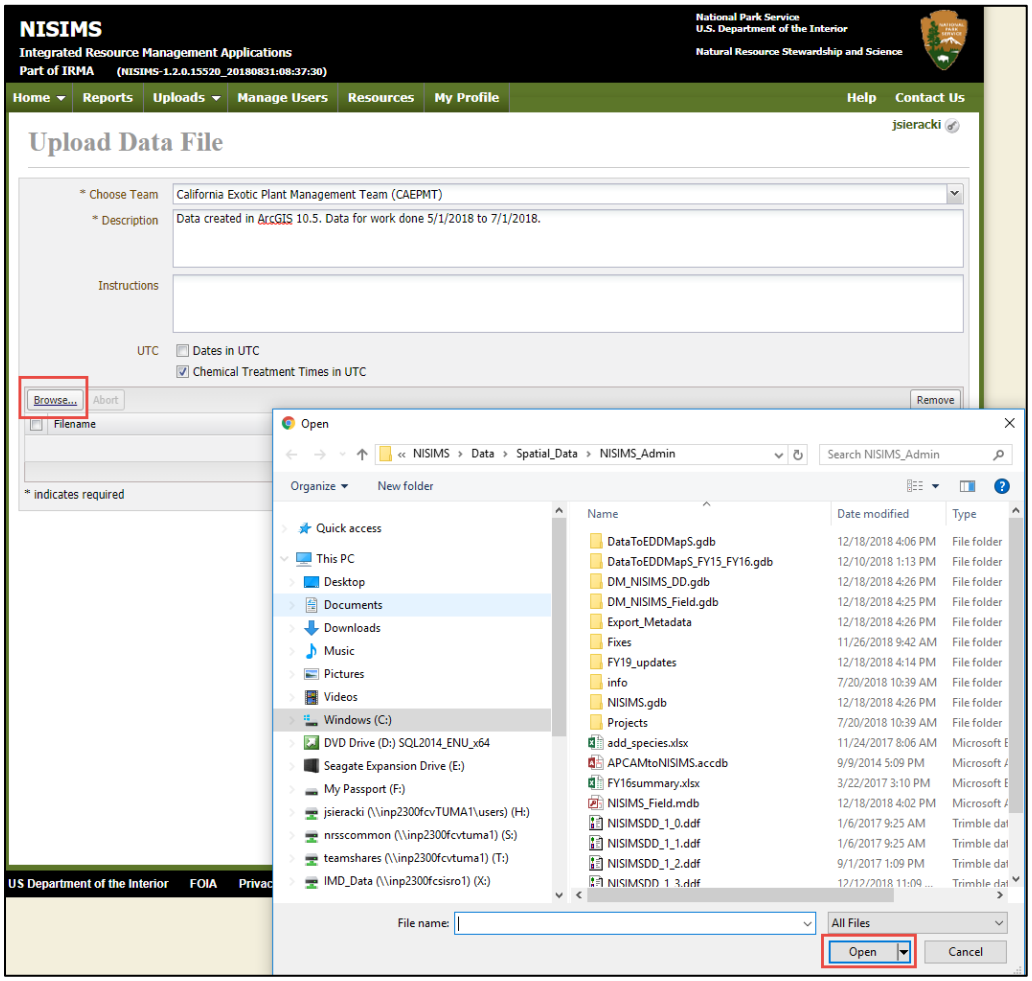
Step 3. Write a description of the data being uploaded. Include the version of software used to create the data and any changes that have been made to the file format (e.g. added SCNTFC_CD11-13 to the ChemicalComponentPy feature class).



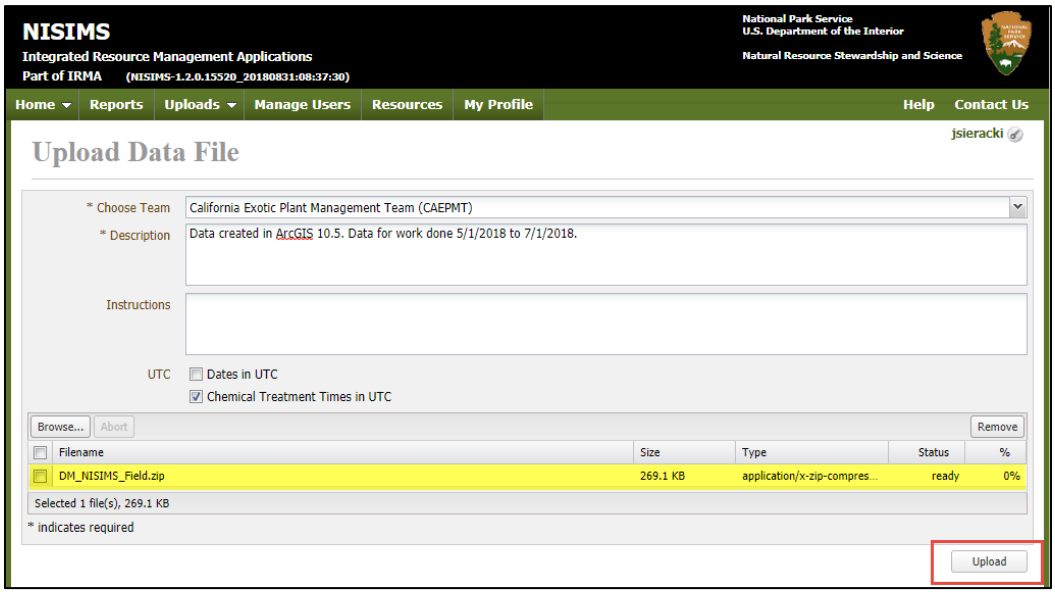
Step 4. If the dates or times recorded in the database are in Coordinated Universal Time (UTC), check the “Dates in UTC” and/or “Chemical Treatment Times in UTC” box(es). If you collected your data using Collector, and did not edit your times after downloading the data from ArcGIS Online, your Chemical Treatment Times are in UTC and any dates that include a time are also in UTC. Dates that do not include a time are not in UTC.



Step 5. Click “Browse…” and browse to the file to be uploaded. Only upload data in a compressed file format (e.g. ZIP, RAR, 7z, etc.). Only one file may be uploaded at a time. Click “Open” to upload the selected file.

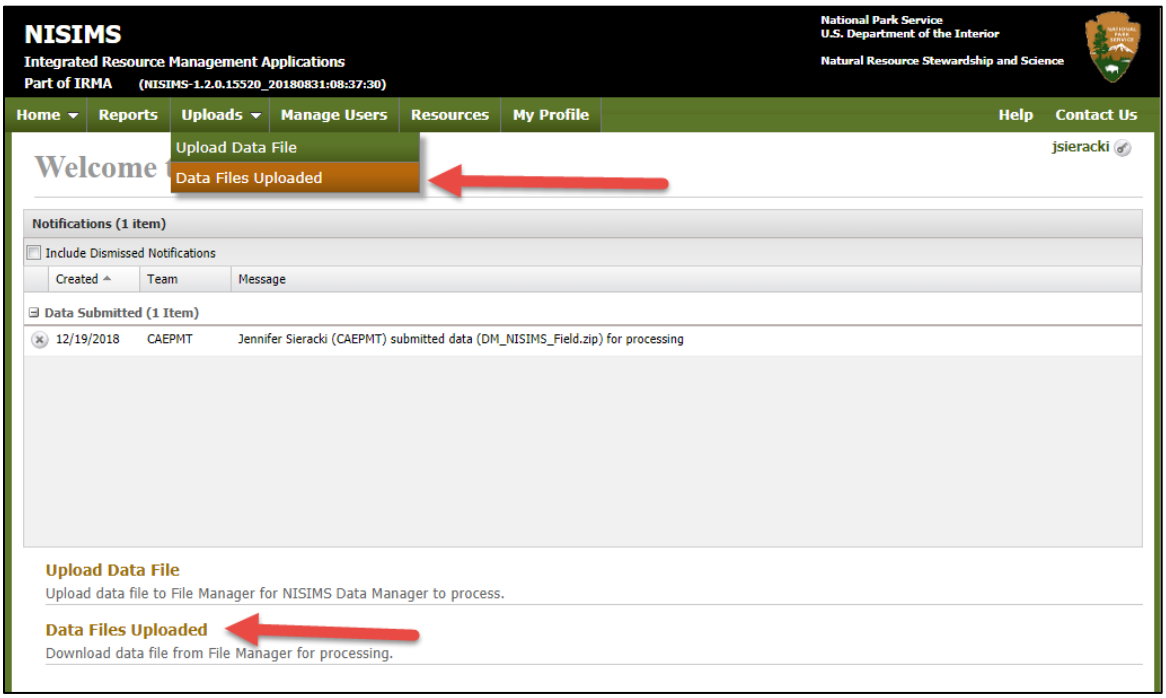


The selected file will be added to the upload box. Click the “Upload” button to complete the upload.

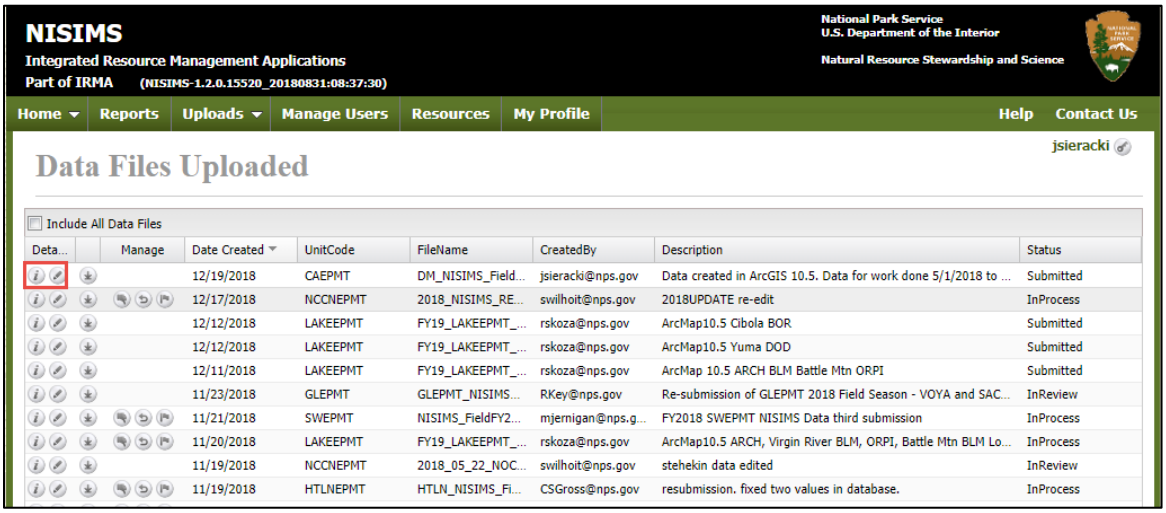


Once completed, you will be brought to the Home page. There should be a message under Notifications informing you that data has been submitted for processing. You will also receive a message via email letting you know that the file has been uploaded and notifications to let you know once the WASO data manager has downloaded your data and either successfully converted it to the NISIMS SDE format or rejected it. If the file has been rejected, detailed information as to what needs to be fixed prior to uploading to the NISIMS SDE will be included.

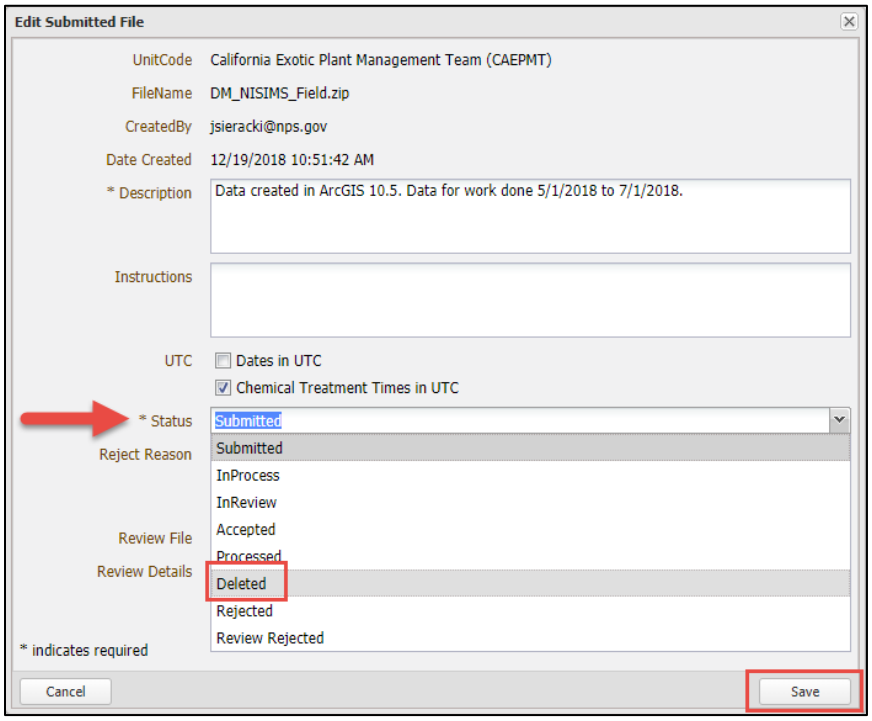
Step 6. You may view information for the files you or others have uploaded for your team(s) or edit them by going to the “Data Files Uploaded” page.



From the “Data Files Uploaded” page, you may use the “View” and “Edit” buttons to review and make changes to the file information included with the data file upload. Files may not be edited once the WASO Data Manager has begun processing them.



You may also delete files from the “Edit Submitted File” form if it is still in “Submitted” status. Files that are “InProcess” or “Processed” may not be deleted, and all changes must be made by contacting the WASO data manager. Other status options will only be available to the WASO data manager. Once edits have been completed, click “Save”.

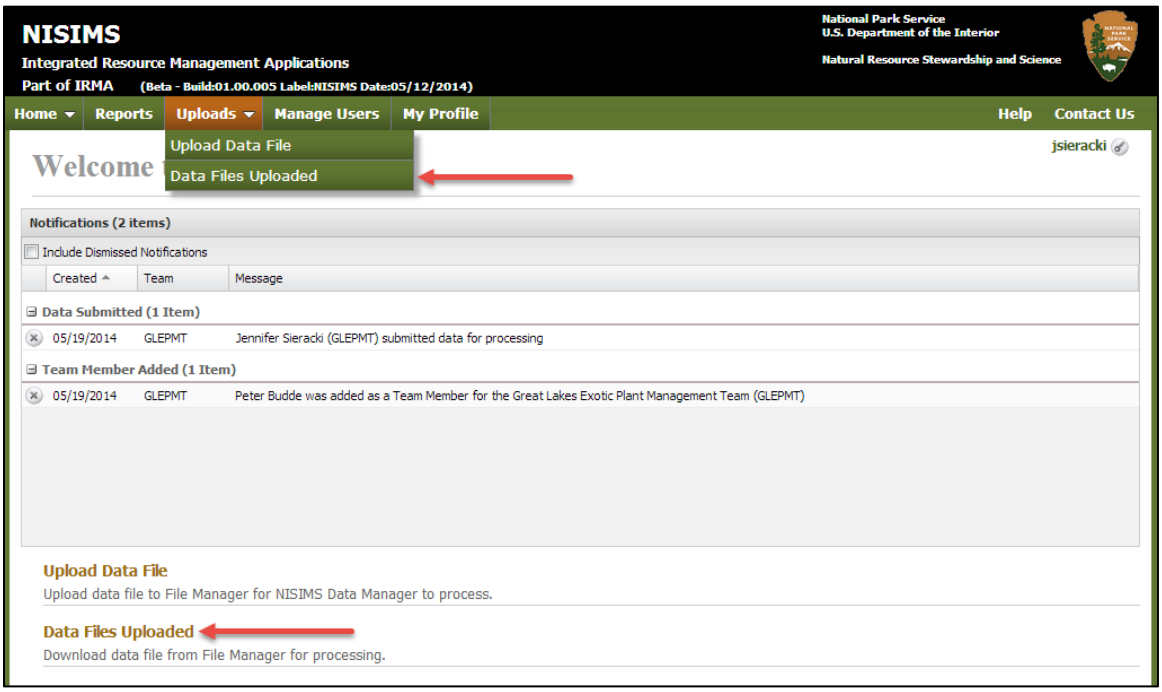


5.2 Quality Checking Data

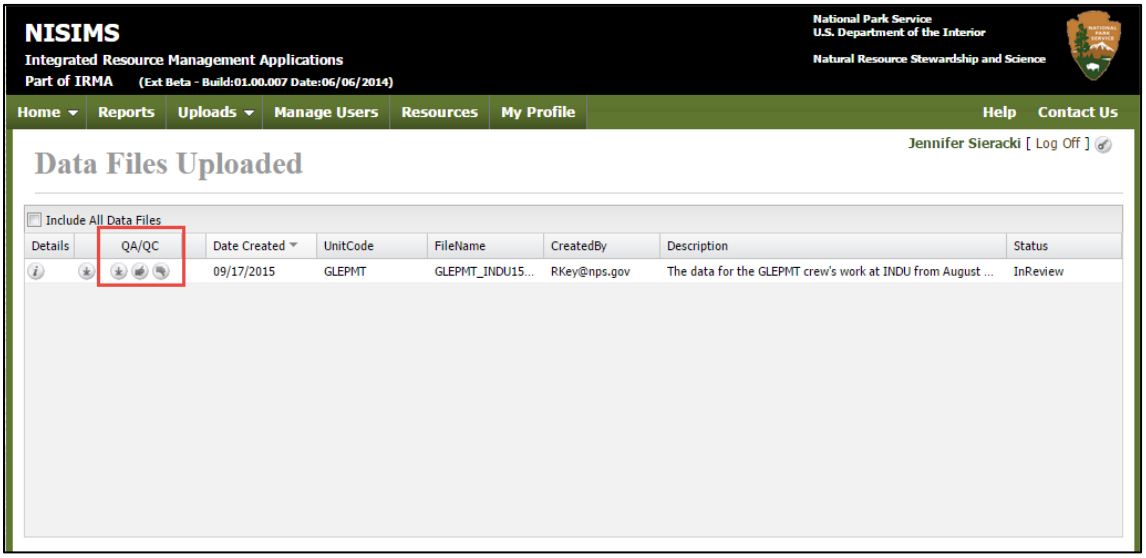
Once the NISIMS data manager has completed converting your data to the NISIMS format, they will create an export file for you, and you will need to check the data for any errors. You will receive notification from NISIMS letting you know that your data is ready to be quality checked.

Instructions: Quality check your data and inform the data manager as to the status of that data.

Step 1. Select “Data Files Uploaded” from your NISIMS home page (https://irma.nps.gov/NISIMS), or select it from the “Uploads” drop-down list at the top of your home page.

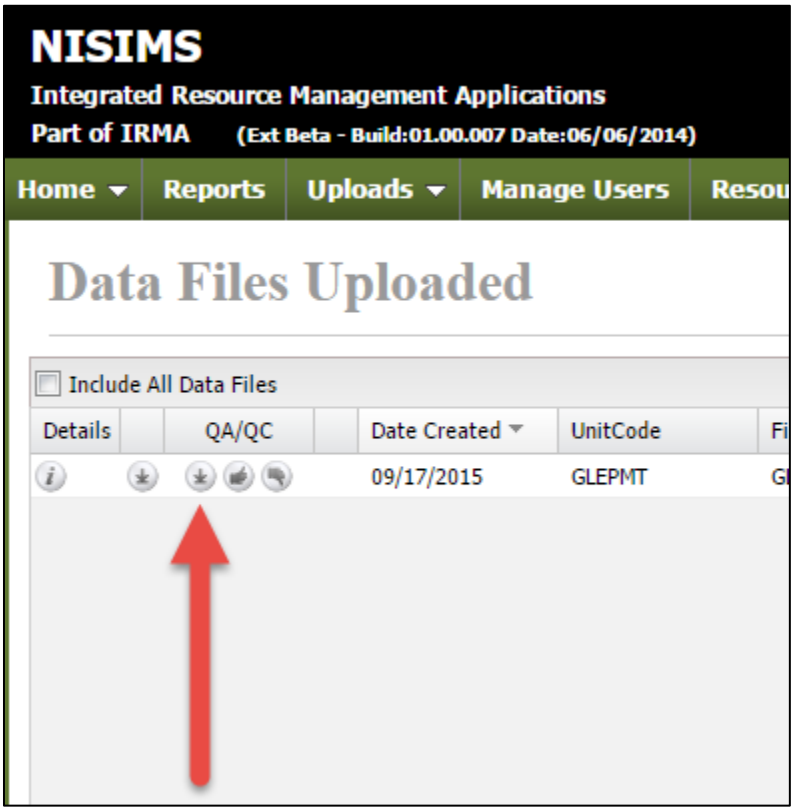


Once a file is ready for quality checking, 3 buttons will appear under QA/QC in your list of “Data Files Uploaded”.



From left to right, these buttons are “Download QA/QC”, “Accept”, and “Reject”.

Step 2. Click “Download QA/QC” button to download a copy of the NISIMS Export file. This will be the data that you check to ensure that everything was entered and converted correctly.

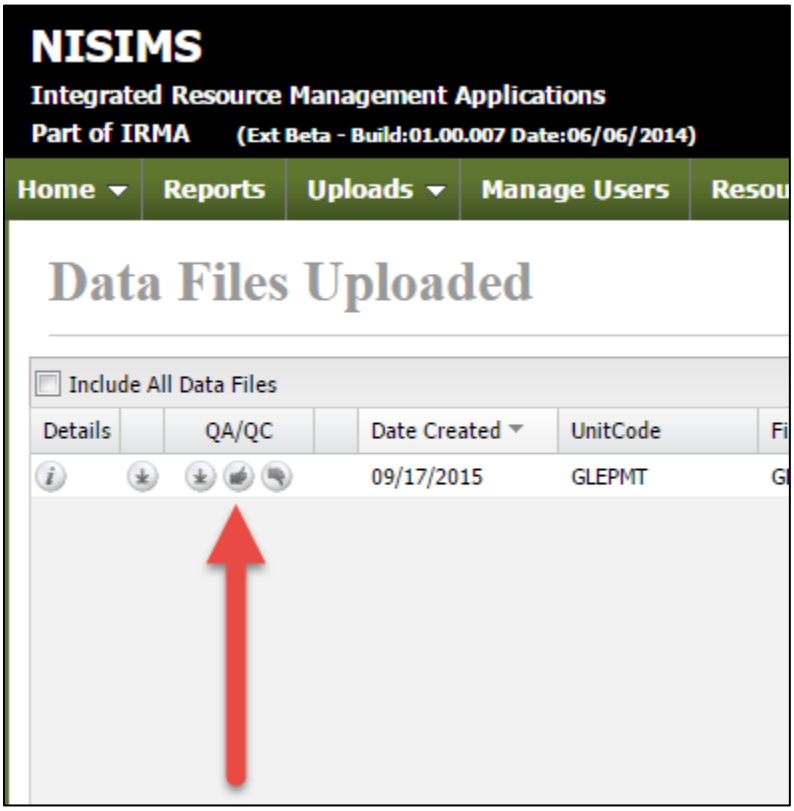


Step 3. Quality check the NISIMS Export file. Things to check for include:

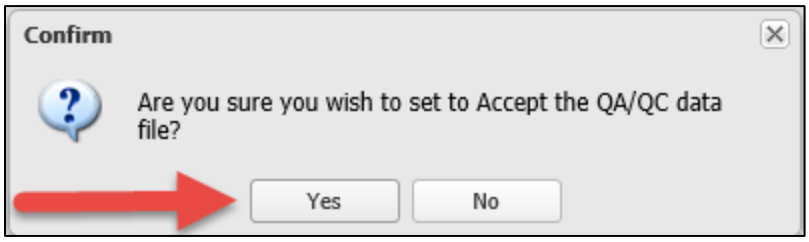
- All records have been converted
- All data has been included with each record (e.g. all species have been added for a single feature, all herbicides were recorded for a chemical record, etc.)
- All lines and points have been buffered correctly
- All polygons are in the correct location (i.e. no projection errors)
- Numbers are represented correctly (e.g. if you entered 0.05 under EST_CVR_RT, did you mean 0.05% or 5%--all cover rates are recorded as a percent, so the first will be assumed)
- Any errors that you may have realized existed after uploading to the NISIMS website
- Anything else that doesn’t look right.

Step 4. Return to the “Data Files Uploaded” page (see Step 1) and select the result of your quality checking efforts.

If the data is correct and ready to be uploaded to NISIMS, click the “Accept” button.

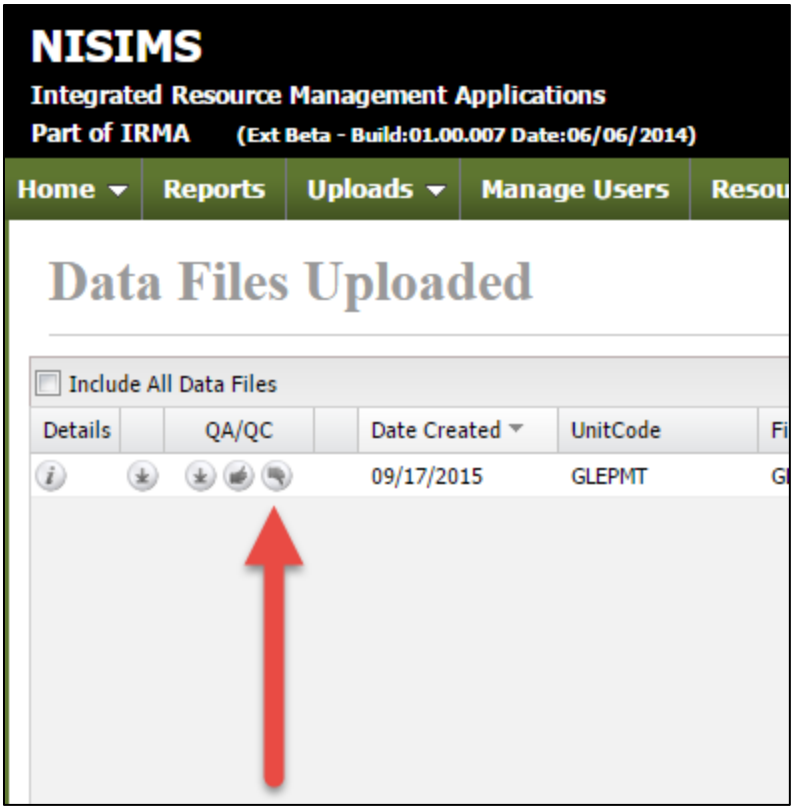


A window will pop open asking you to confirm that you wish to accept the QA/QC data. Click “Yes”.

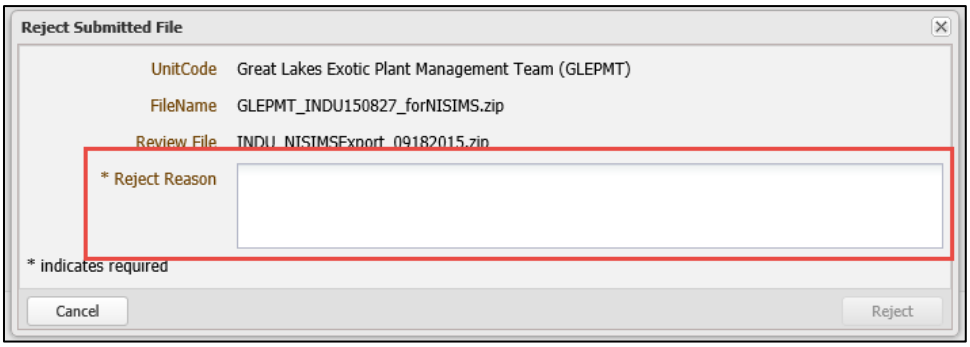


The NISIMS Data Manager will now receive notification that your data is ready to upload to the NISIMS SDE. Once she has completed this, you will receive a notification that the data has been processed.

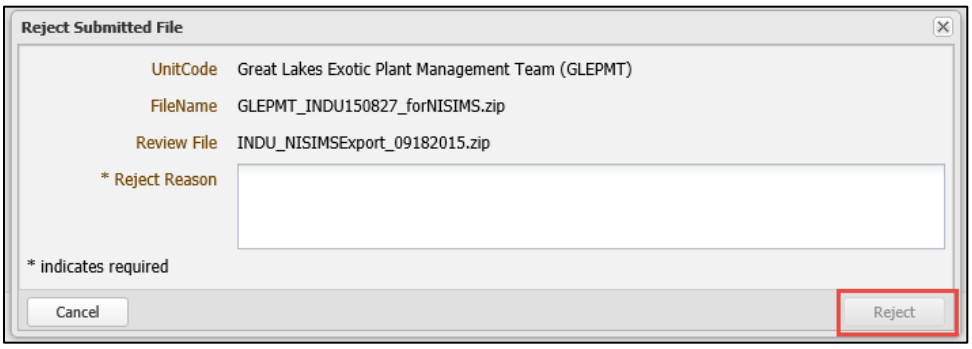
If the data contains errors and needs to be edited prior to being uploaded to NISIMS, click the “Reject” button.



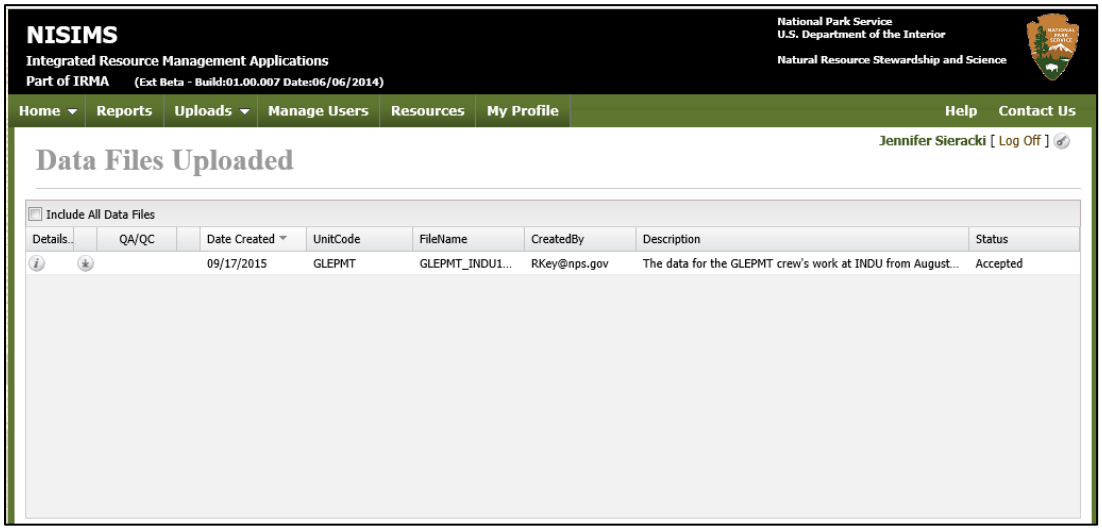
The “Reject Submitted File” window will open. Be sure to include the reason you are rejecting in the “Reject Reason” box. Include the type of errors that were found so that the NISIMS Data Manager may determine what the next steps need to be.



Once you have entered your Reject Reason, click the “Reject” button. The NISIMS Data Manager will contact you with further instructions.



Step 5. Once the data has been either accepted or rejected, the QA/QC buttons for that record will disappear, and the status of your record will be updated as appropriate.

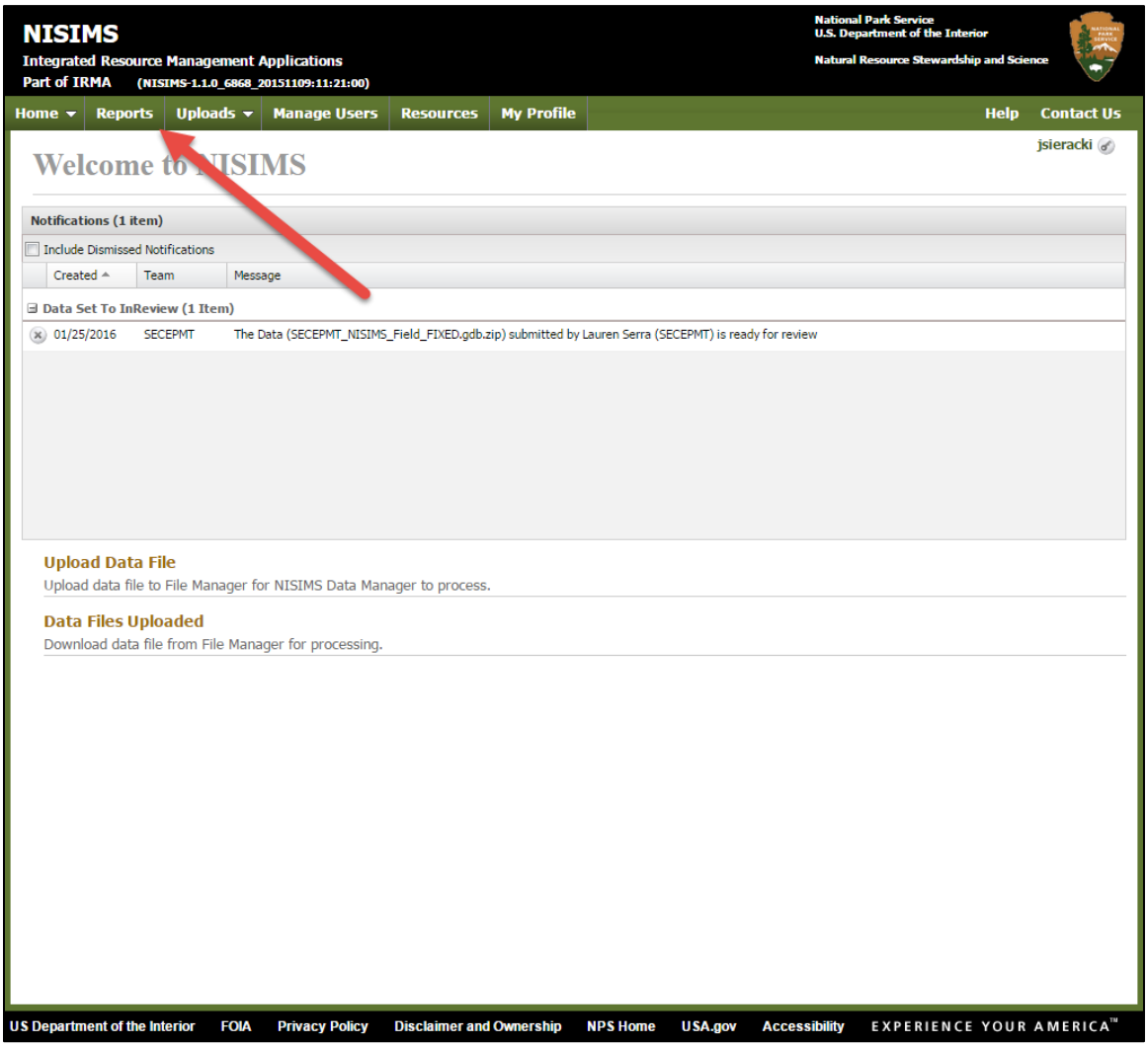


5.3 Accessing Reports

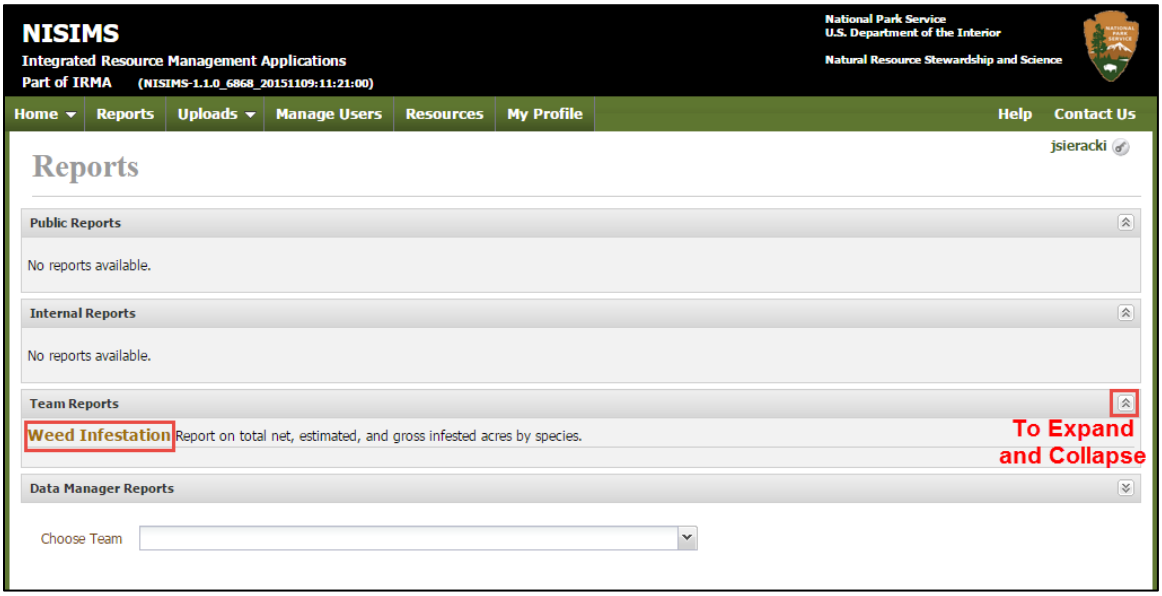
The NISIMS website provides reporting capabilities that allow users to retrieve summaries of data that have been uploaded to the NISIMS SDE geodatabase. Currently, reports are only available to those users who have been assigned to a team. All reports work in the same manner: the user creates a query selecting values from a series of drop-down menus, and a report is generated. This report may be exported in a number of formats. The instructions below provide step-by-step instructions for how to do this.

Instructions: Create and download a Weed Infestation Report from the NISIMS website.

Step 1. From the NISIMS website, click on the “Reports” tab.

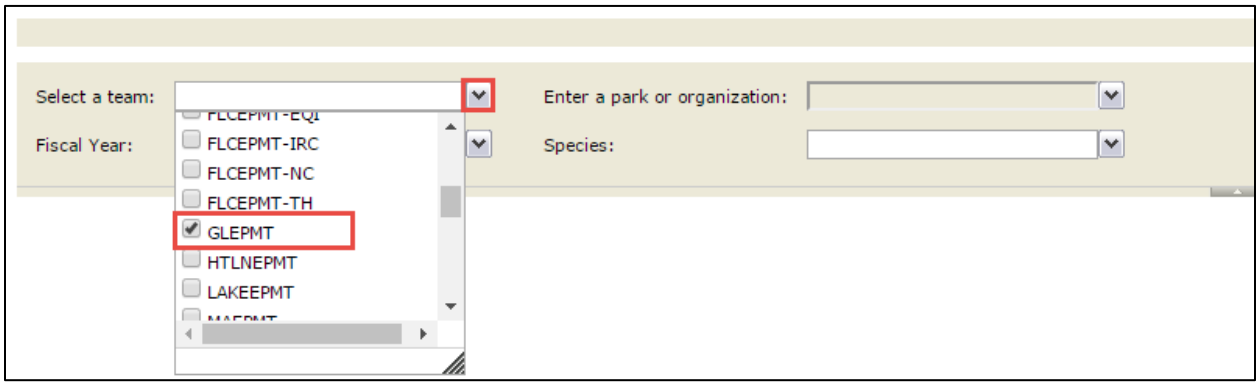


Step 2. Select the “Weed Infestation” report under the “Team Reports” heading. If you cannot see any reports listed, expand the report categories by clicking the buttons on the far right end of each heading.



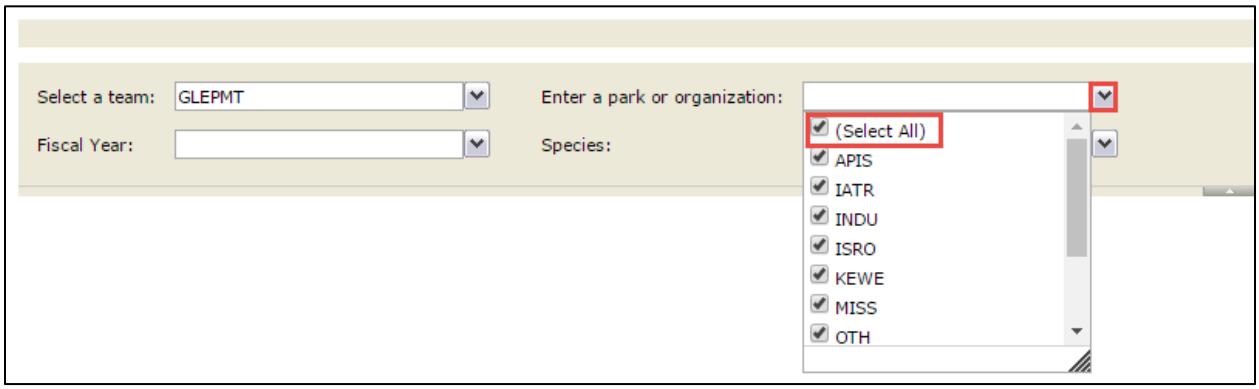
Step 3. In the window that opens, select from the drop-down menus to build the desired query. For this exercise, we will create a report of all species found in all the parks served by the Great Lakes EPMT in fiscal years 2014 and 2015.

Click the arrow next to the “Select a team:” drop-down box, scroll down the list that appears, and check the box next to GLEPMT.

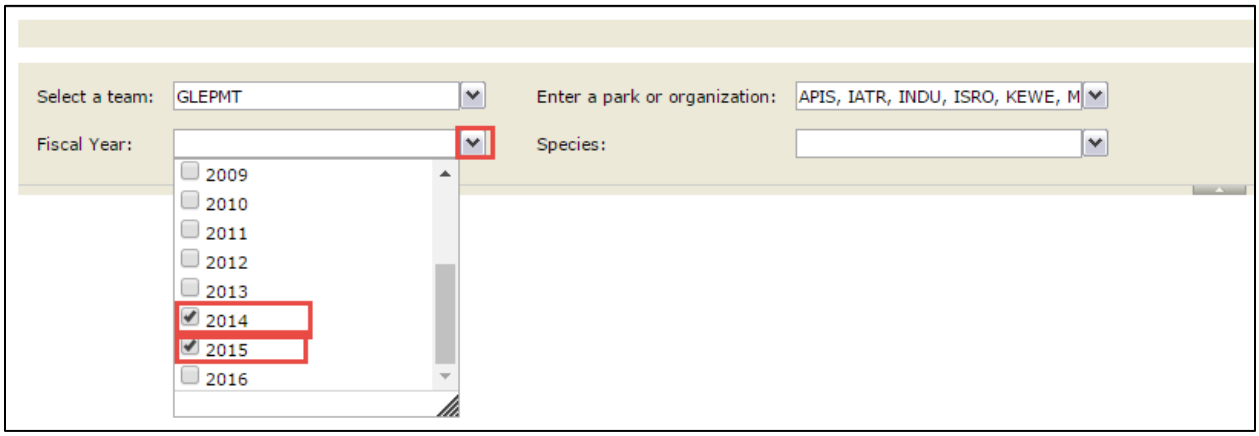


Click outside the drop-down menu and wait a few seconds for the “Enter a park or organization:” drop-down box to turn white.

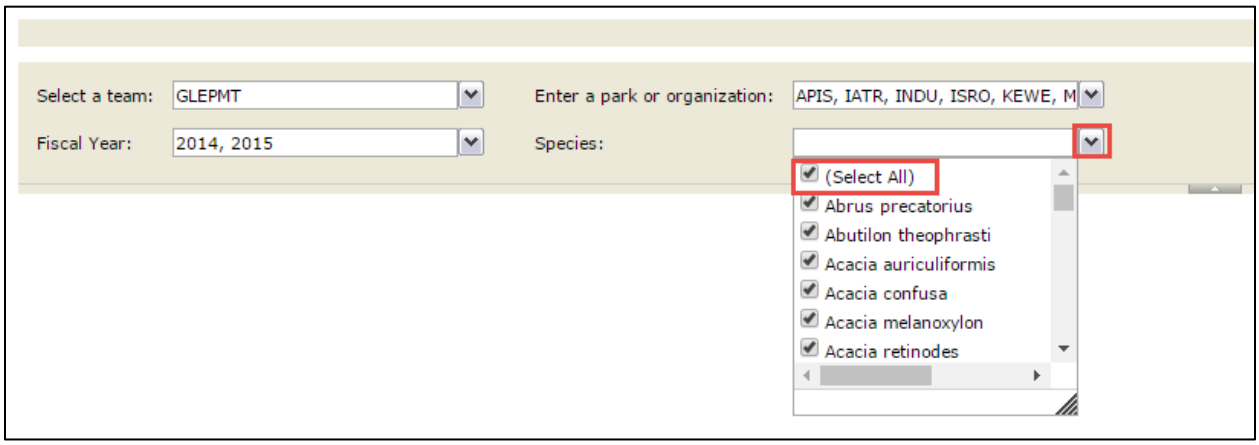
Once the “Enter a park or organization:” box has turned white, click the arrow on the right end of the box to open the drop-down list, and check the box next to “(Select All)”. All parks should now be checked. The “(Select All)” check-box may also be used to de-select all selected values.



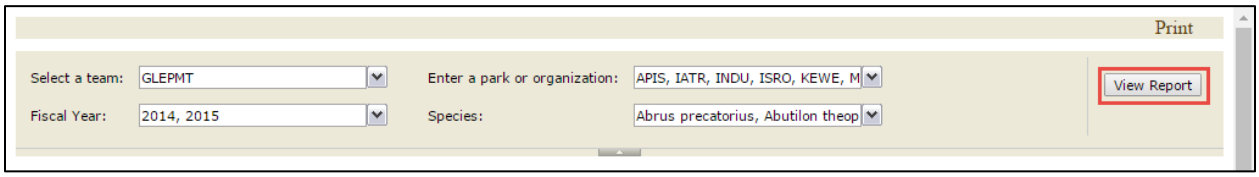
Click the arrow on the right end of the “Fiscal Year:” drop-down box. Scroll down the list that appears and check the boxes next to 2014 and 2015.



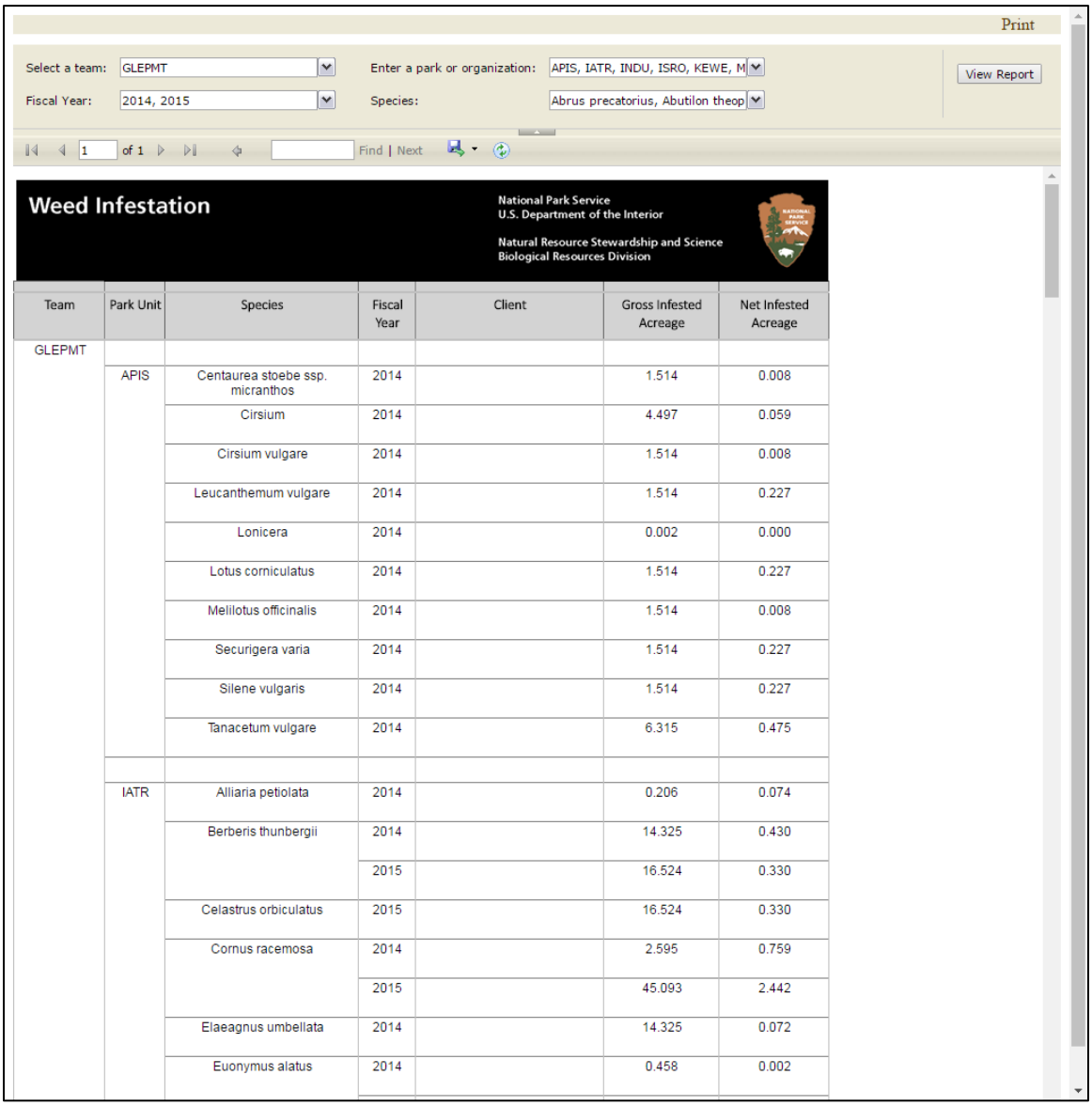
Finally, click the arrow on the right end of the “Species:” drop-down box. Check the box next to “(Select All)” in the drop-down list that appears.



Step 4. Once all drop-down boxes have been populated, click the “View Report” button in the upper right-hand corner of the webpage.

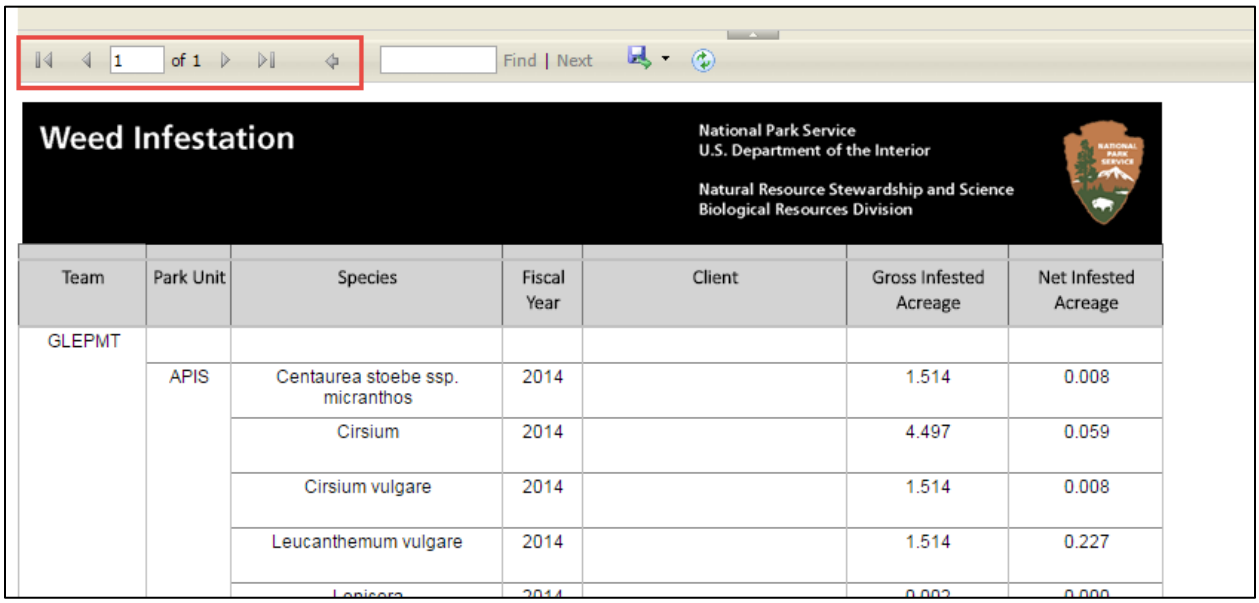


After a few moments, the report will appear in the empty window below the drop-down boxes.



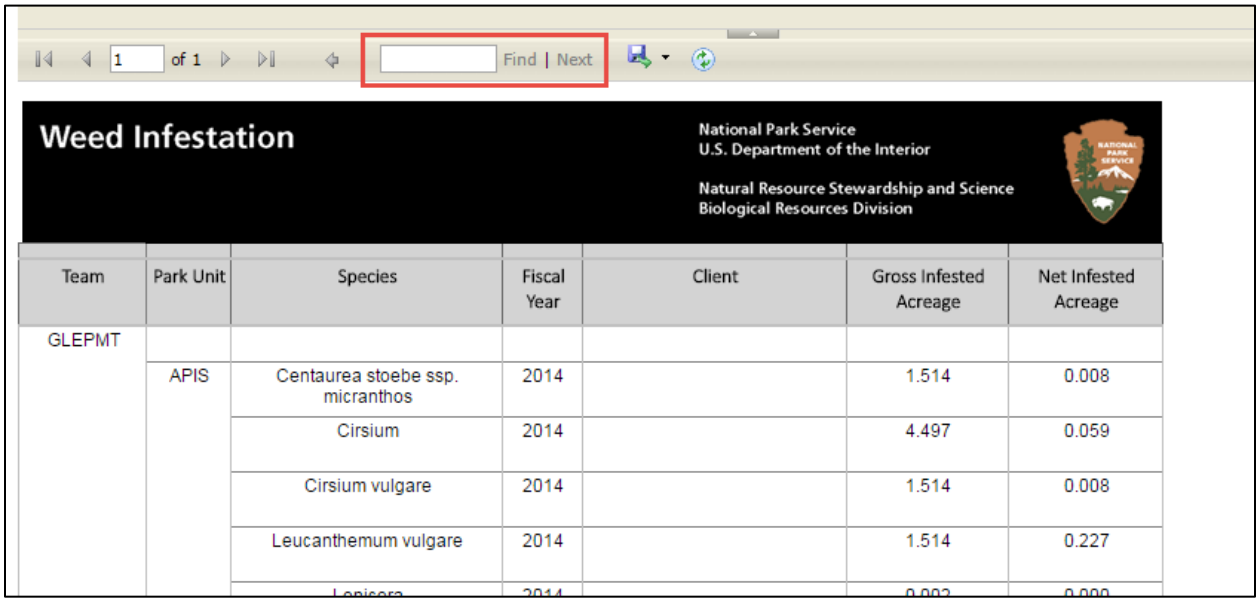
Team	Park Unit	Species	Fiscal Year	Client	Gross Infested Acreage	Net Infested Acreage
GLEPMT						
	APIS	Centaurea stoebe ssp. micranthos	2014		1.514	0.008
		Cirsium	2014		4.497	0.059
		Cirsium vulgare	2014		1.514	0.008
		Leucanthemum vulgare	2014		1.514	0.227
		Lonicera	2014		0.002	0.000
		Lotus corniculatus	2014		1.514	0.227
		Melilotus officinalis	2014		1.514	0.008
		Securigera varia	2014		1.514	0.227
		Silene vulgaris	2014		1.514	0.227
		Tanacetum vulgare	2014		6.315	0.475
	IATR	Alliaria petiolata	2014		0.206	0.074
		Berberis thunbergii	2014		14.325	0.430
			2015		16.524	0.330
		Celastrus orbiculatus	2015		16.524	0.330
		Cornus racemosa	2014		2.595	0.759
			2015		45.093	2.442
		Elaeagnus umbellata	2014		14.325	0.072
		Euonymus alatus	2014		0.458	0.002

If there are multiple pages, you may navigate through the report using the “Navigate” toolbar at the top of the report.



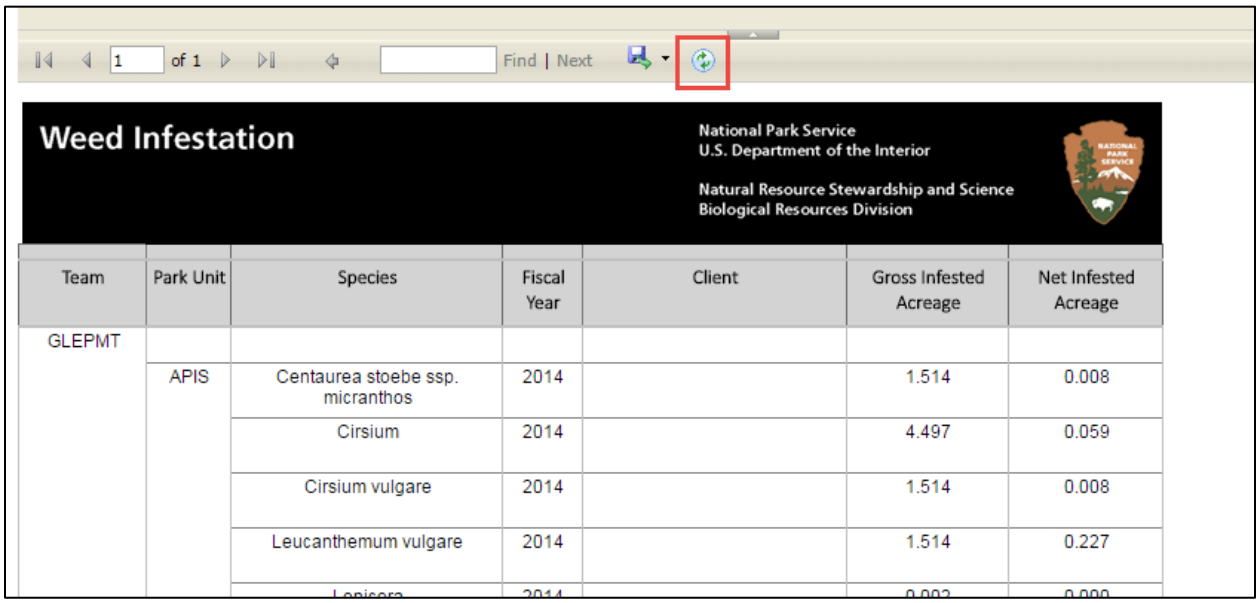
Team	Park Unit	Species	Fiscal Year	Client	Gross Infested Acreage	Net Infested Acreage
GLEPMT						
	APIS	Centaurea stoebe ssp. micranthos	2014		1.514	0.008
		Cirsium	2014		4.497	0.059
		Cirsium vulgare	2014		1.514	0.008
		Leucanthemum vulgare	2014		1.514	0.227

You may also search for specific words in your report using the “Find” toolbar.

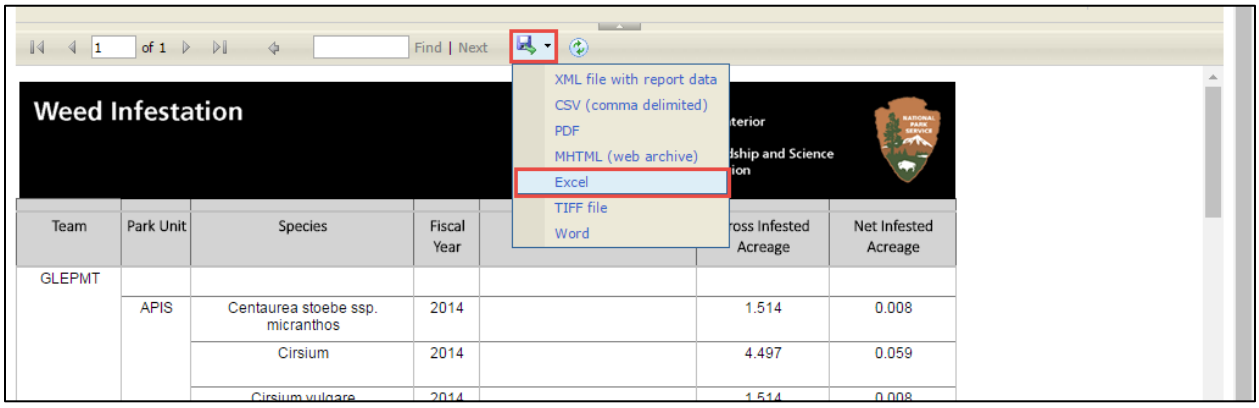


Team	Park Unit	Species	Fiscal Year	Client	Gross Infested Acreage	Net Infested Acreage
GLEPMT						
	APIS	Centaurea stoebe ssp. micranthos	2014		1.514	0.008
		Cirsium	2014		4.497	0.059
		Cirsium vulgare	2014		1.514	0.008
		Leucanthemum vulgare	2014		1.514	0.227

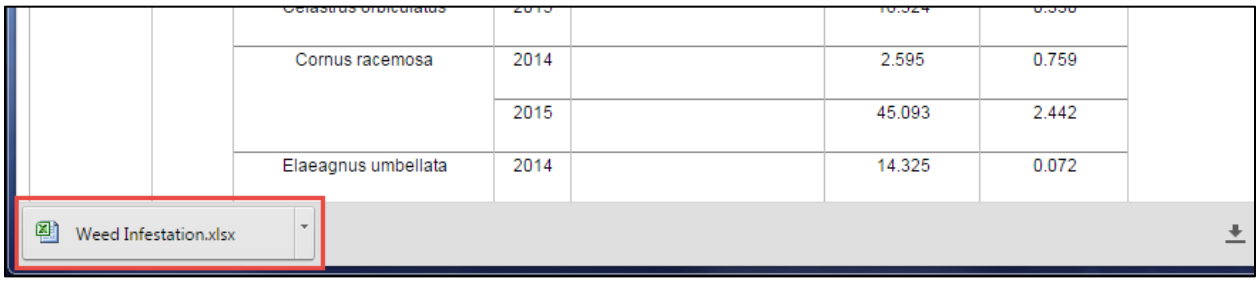
Use the “Refresh” button to refresh the report. Do not use your browsers refresh option, as this will clear your query, and you will have to rebuild it again.



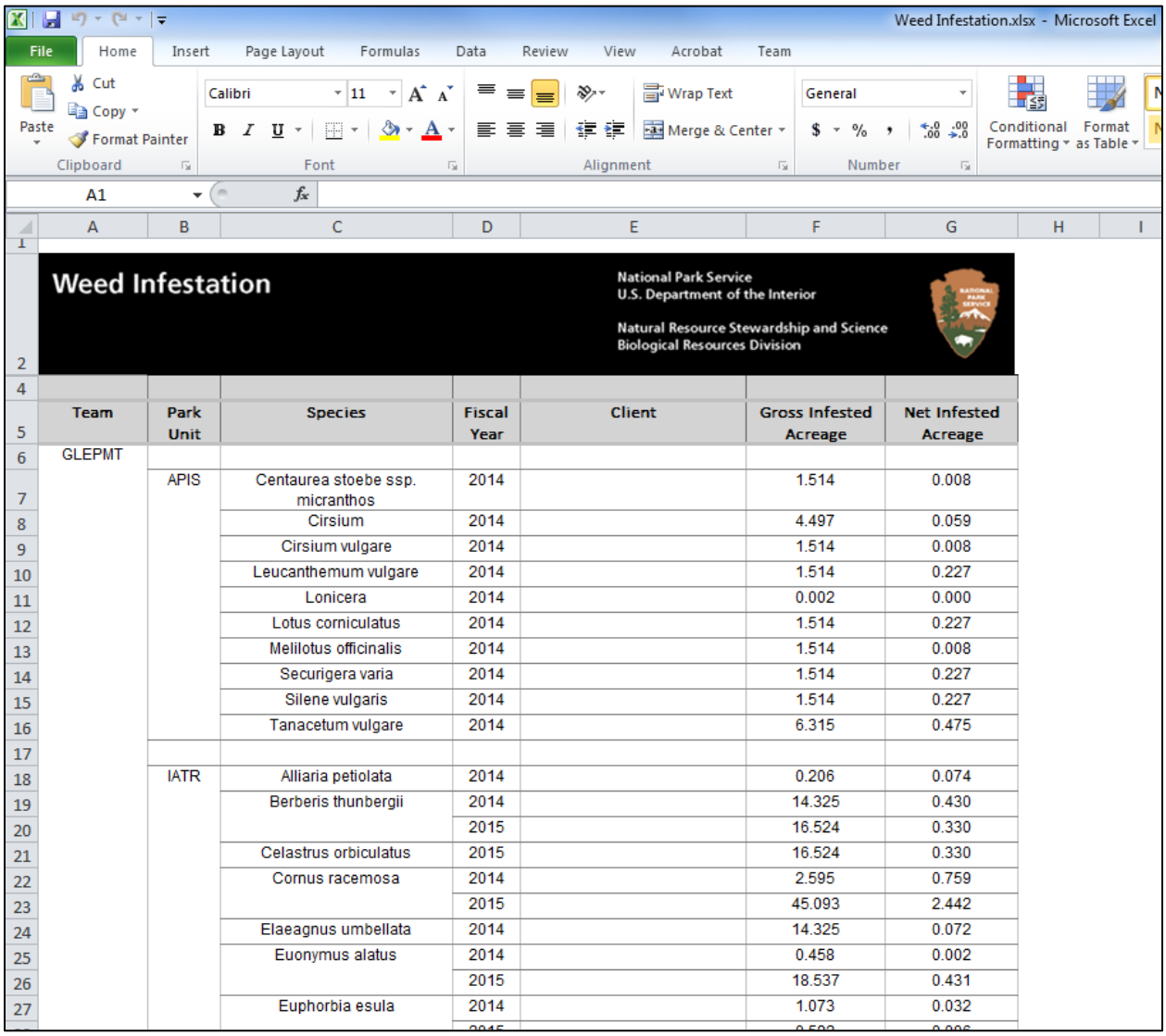
Step 5. Click the “Export” button above the report. Select “Excel” to export your report as an Excel spreadsheet. You may also choose to export your report using any of the other file types available; however, Chrome blocks the export of MHTML files.



Your file will download in the manner which your browser always downloads files (Chrome example below).



Once downloaded, you may open your file.



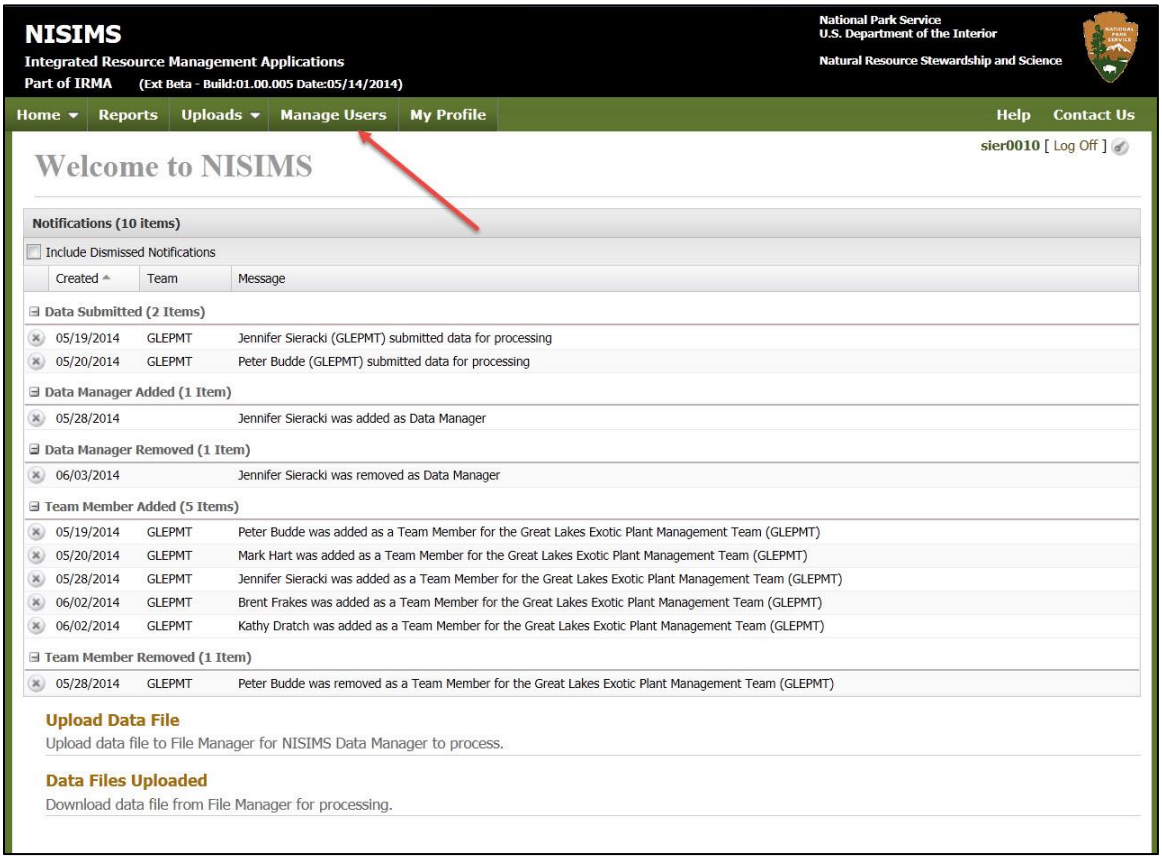
Team	Park Unit	Species	Fiscal Year	Client	Gross Infested Acreage	Net Infested Acreage
GLEPMT						
	APIS	Centaurea stoebe ssp. micranthos	2014		1.514	0.008
		Cirsium	2014		4.497	0.059
		Cirsium vulgare	2014		1.514	0.008
		Leucanthemum vulgare	2014		1.514	0.227
		Lonicera	2014		0.002	0.000
		Lotus corniculatus	2014		1.514	0.227
		Melilotus officinalis	2014		1.514	0.008
		Securigera varia	2014		1.514	0.227
		Silene vulgaris	2014		1.514	0.227
		Tanacetum vulgare	2014		6.315	0.475
	IATR	Alliaria petiolata	2014		0.206	0.074
		Berberis thunbergii	2014		14.325	0.430
			2015		16.524	0.330
		Celastrus orbiculatus	2015		16.524	0.330
		Cornus racemosa	2014		2.595	0.759
			2015		45.093	2.442
		Elaeagnus umbellata	2014		14.325	0.072
		Euonymus alatus	2014		0.458	0.002
			2015		18.537	0.431
		Euphorbia esula	2014		1.073	0.032

5.4 Adding Users

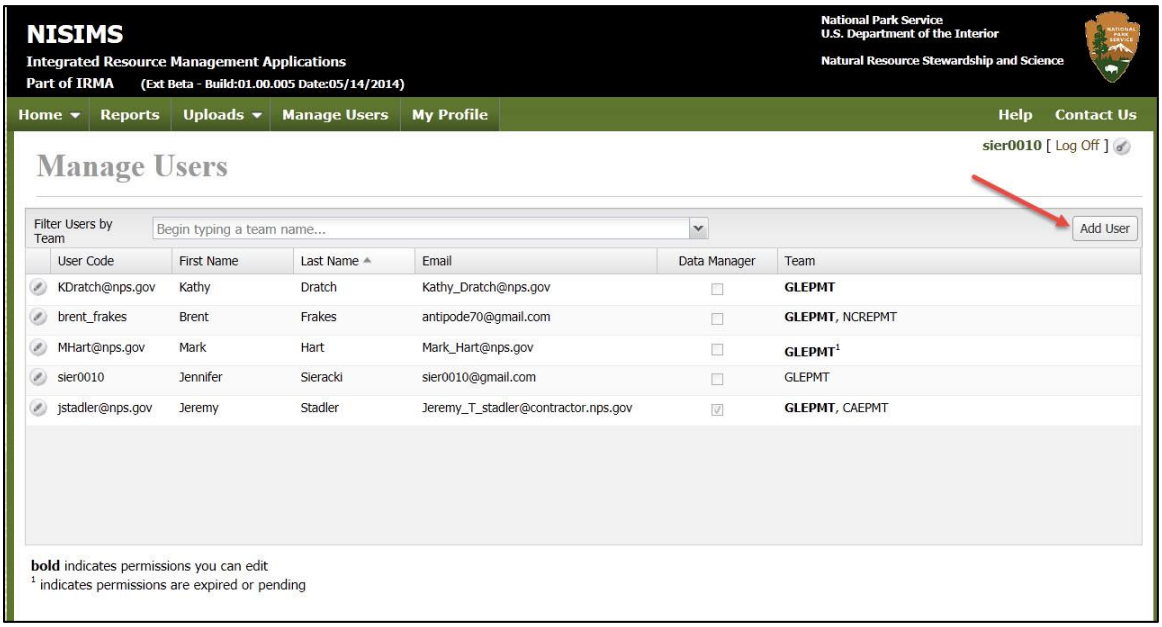
Once a user has been given rights to upload data for an EPMT or park, they will then be able to add additional users to their unit. Instructions for adding users follows.

Instructions: Add a user to the NISIMS web interface

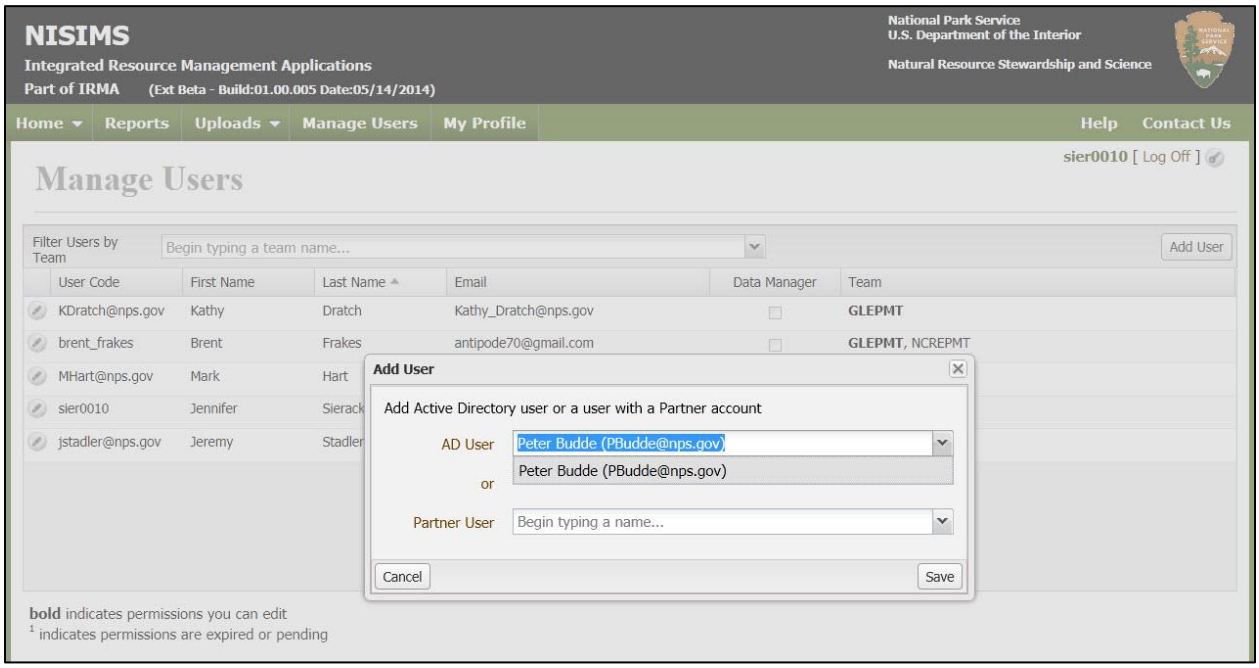
Step 1. Select “Manage Users” from your home page menu.



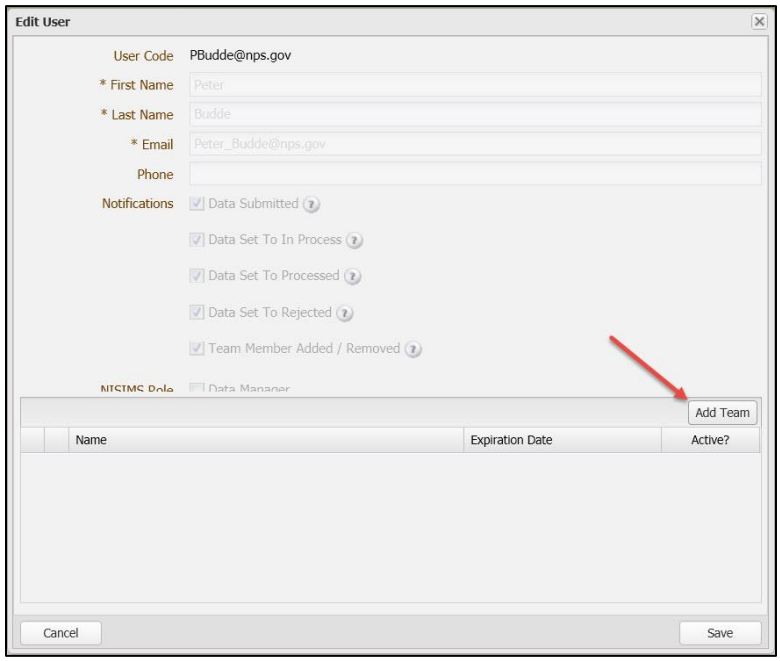
Step 2. From the “Manage Users” page, click the “Add User” button.



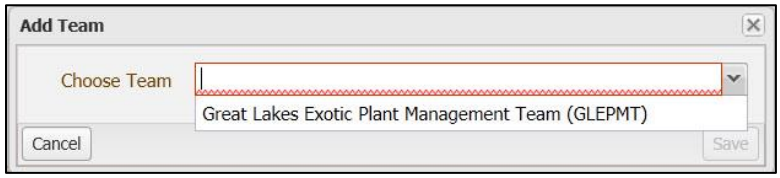
The “Add User” form will pop up. Begin typing the name of the user you want to add from the appropriate drop-down list. A list of potential users will build below the name you are typing. Select the user you want to add from the drop-down list and click “Save”.



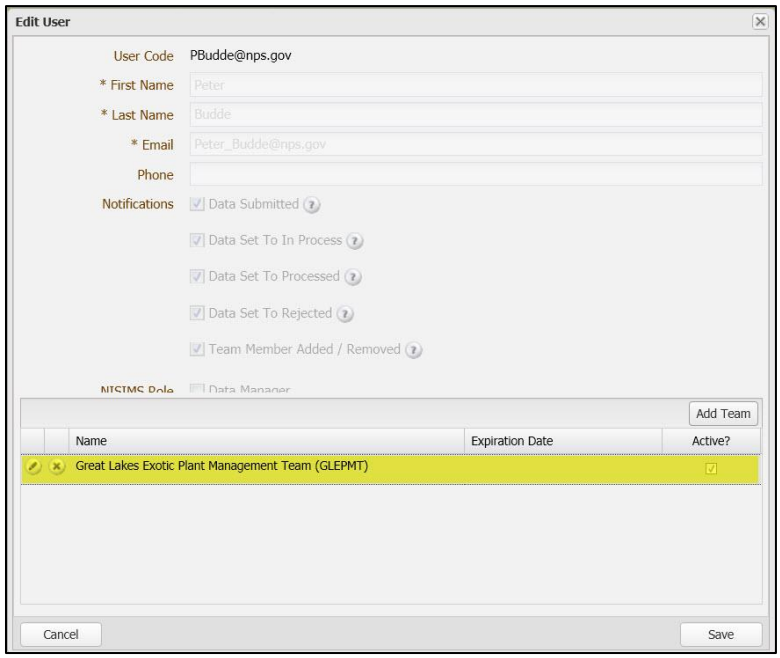
Step 3. Click the “Add Team” button from the “Edit User” form.



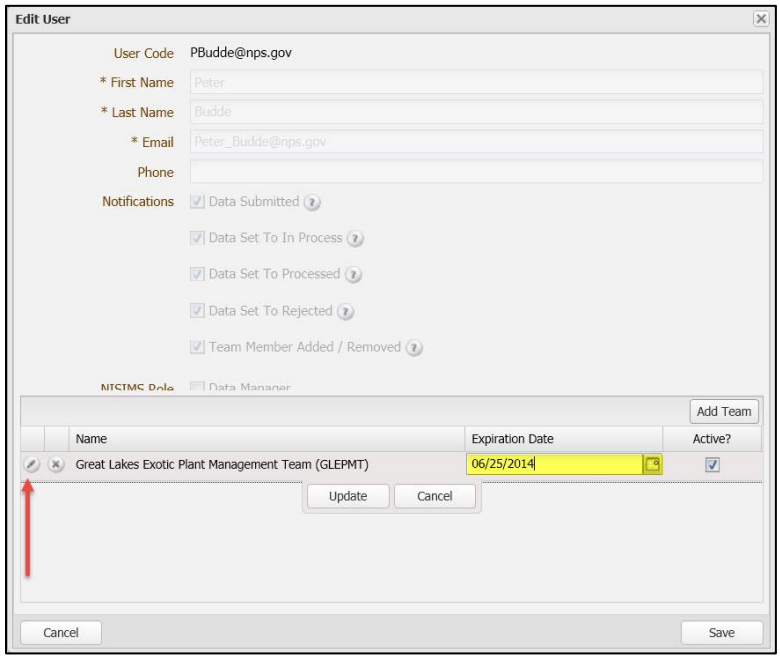
Step 4. The “Add Team” form will pop up. Select the team to which you wish to give the new user access from the drop-down list and click “Save”.



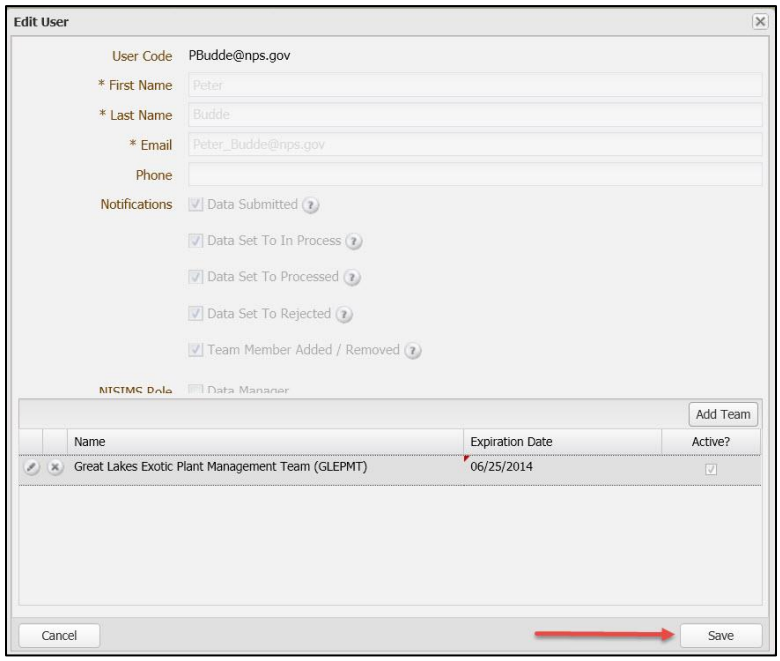
The team will be added to the user's profile.



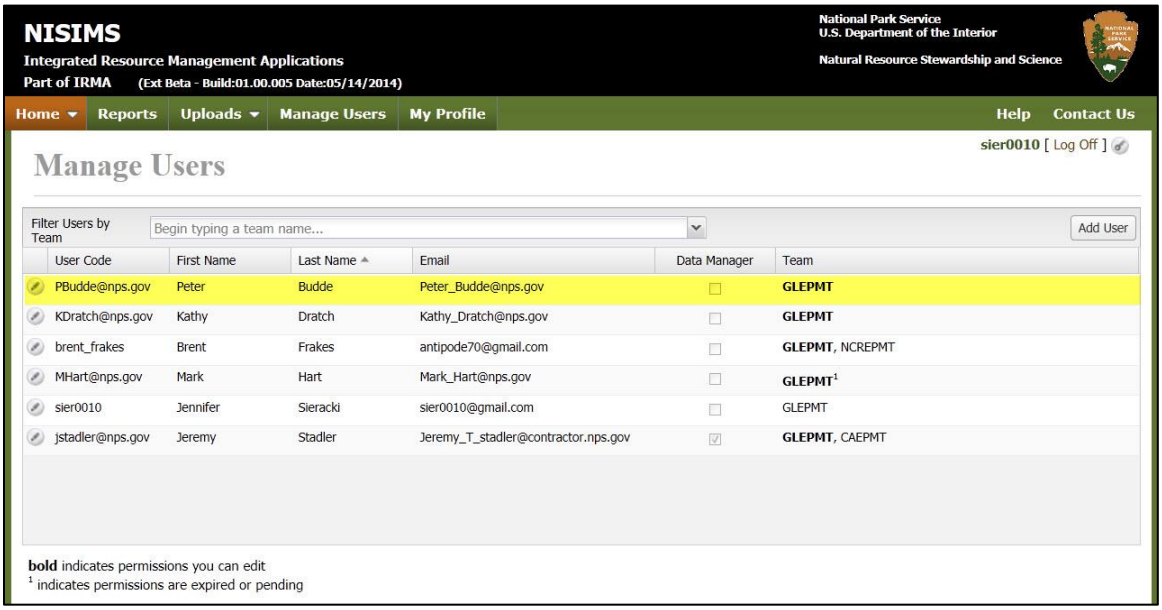
Step 5. (Optional) You may add an expiration date to allow the user access to the team's data. Do this by clicking the Edit button next to the team name. This will allow you to edit the date field. Click the "Update" button when done.



Step 6. Click the “Save” button once all edits are complete.

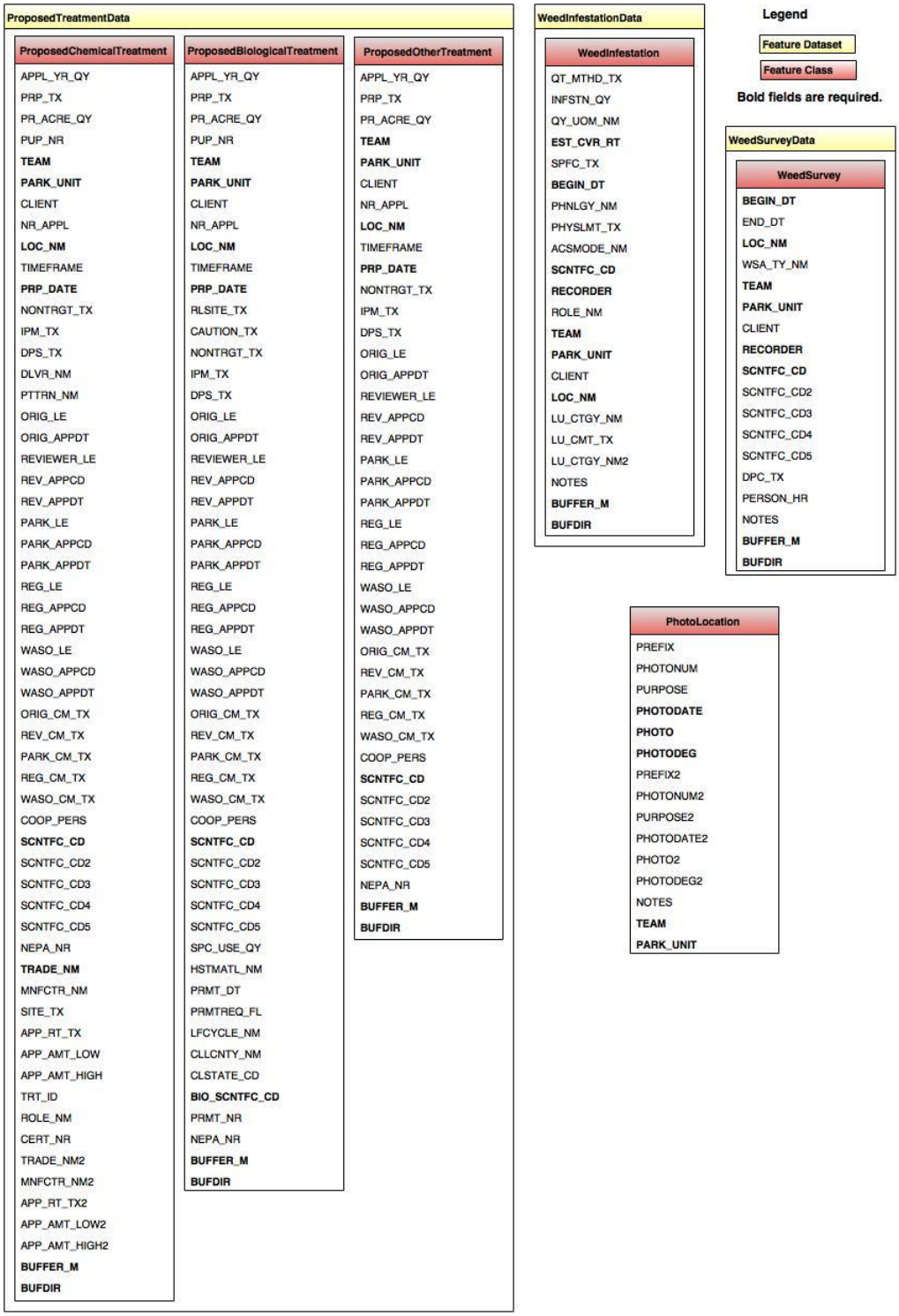


The new user will now appear on the “Manage Users” page. You may further edit and delete user profiles from this list. You will receive notification via email that a new user has been added.



Appendix A: NISIMS Field Geodatabase Diagram

The diagram depicts the line feature classes for each of the data types included in the geodatabase. The field geodatabase also includes a point and polygon feature class for each data type, as well. Only points are collected for photo locations.



4

BiologicalComponent
AREA_TY_NM
TEMP_TREAT_SITE
LOC_NM
TEAM
PARK_UNIT
CLIENT
RECORDER
ROLE_NM
TRT_BEG_DT
TRT_END_DT
PHNLGY_NM
DPC_TX
SCNTFC_CD
EST_CVR_RT
TRT_QTY
SCNTFC_CD2
EST_CVR_RT2
TRT_QTY2
SCNTFC_CD3
EST_CVR_RT3
TRT_QTY3
SCNTFC_CD4
EST_CVR_RT4
TRT_QTY4
SCNTFC_CD5
EST_CVR_RT5
TRT_QTY5
BUP_NR
BIO_SCNTFC_CD
SPC_USE_QY
PRTCMTH_TX
RLSDRCT_TX
SOURCE
HSTMATL_NM
LFCYCLE_NM
CLLCNTY_NM
COLLECT_DT
CLSTATE_CD
FA_AIR_ME
WNDMPH_ME
SL_MOIS_NM
WNDDRCT_CD
PERSON_HR
NOTES
BUFFER_M
BUFDIR

ChemicalComponent
AREA_TY_NM
TEMP_TREAT_SITE
LOC_NM
TEAM
PARK_UNIT
CLIENT
RECORDER
ROLE_NM
TRT_BEG_DT
TRT_END_DT
PHNLGY_NM
DPC_TX
SCNTFC_CD
EST_CVR_RT
TRT_QTY
SCNTFC_CD2
EST_CVR_RT2
TRT_QTY2
SCNTFC_CD3
EST_CVR_RT3
TRT_QTY3
SCNTFC_CD4
EST_CVR_RT4
TRT_QTY4
SCNTFC_CD5
EST_CVR_RT5
TRT_QTY5
MIXUOM_NM
MIXVOL_ME
CARR_TY_NM
RLSDRCT_TX
PUP_NR
DLVR_NM
PTTRN_NM
WTRDIST_TX
TRT_BEG_TM
TRT_END_TM
PERSON_HR
EQ_OUT_RT
EQ_UOM_NM
EQ_TY_NM
FA_AIR_ME
P_AFTER_QY
HUMID_RT
WNDMPH_ME
SL_MOIS_NM
PRECIP_NM
WNDDRCT_CD
TRADE_NM
EPAREGISTRATIONNUMBER
AGT_APP_RT
APP_UOM_NM
ACTLUSE_QY
AGT_UOM_NM
MNFCTR_NM
TRADE_NM2
EPAREGISTRATIONNUMBER2
AGT_APP_RT2
APP_UOM_NM2
ACTLUSE_QY2
AGT_UOM_NM2
MNFCTR_NM2
ADJ_TRADE_NM
ADJ_ACTLUSE_QTY
ADJ_AGT_UOM_NM
ADJ_AGT_APP_RT
ADJ_APP_UOM_NM
ADJ_TRADE_NM2
ADJ_ACTLUSE_QTY2
ADJ_AGT_UOM_NM2
ADJ_AGT_APP_RT2
ADJ_APP_UOM_NM2
NOTES
BUFFER_M
BUFDIR

FireComponent
AREA_TY_NM
TEMP_TREAT_SITE
LOC_NM
TEAM
PARK_UNIT
CLIENT
RECORDER
ROLE_NM
TRT_BEG_DT
TRT_END_DT
PHNLGY_NM
DPC_TX
SCNTFC_CD
EST_CVR_RT
TRT_QTY
SCNTFC_CD2
EST_CVR_RT2
TRT_QTY2
SCNTFC_CD3
EST_CVR_RT3
TRT_QTY3
SCNTFC_CD4
EST_CVR_RT4
TRT_QTY4
SCNTFC_CD5
EST_CVR_RT5
TRT_QTY5
INTNSTY_NM
FUELMDL_TX
PERSON_HR
NOTES
BUFFER_M
BUFDIR

ManualComponent
AREA_TY_NM
TEMP_TREAT_SITE
LOC_NM
TEAM
PARK_UNIT
CLIENT
RECORDER
ROLE_NM
TRT_BEG_DT
TRT_END_DT
PHNLGY_NM
DPC_TX
SCNTFC_CD
EST_CVR_RT
TRT_QTY
SCNTFC_CD2
EST_CVR_RT2
TRT_QTY2
SCNTFC_CD3
EST_CVR_RT3
TRT_QTY3
SCNTFC_CD4
EST_CVR_RT4
TRT_QTY4
SCNTFC_CD5
EST_CVR_RT5
TRT_QTY5
MANL_CL_NM
PERSON_HR
NOTES
BUFFER_M
BUFDIR

MechanicalComponet
AREA_TY_NM
TEMP_TREAT_SITE
LOC_NM
TEAM
PARK_UNIT
CLIENT
RECORDER
ROLE_NM
TRT_BEG_DT
TRT_END_DT
PHNLGY_NM
DPC_TX
SCNTFC_CD
EST_CVR_RT
TRT_QTY
SCNTFC_CD2
EST_CVR_RT2
TRT_QTY2
SCNTFC_CD3
EST_CVR_RT3
TRT_QTY3
SCNTFC_CD4
EST_CVR_RT4
TRT_QTY4
SCNTFC_CD5
EST_CVR_RT5
TRT_QTY5
MECH_CL_NM
PERSON_HR
BUFFER_M
BUFDIR
NOTES

MechanicalComponet
AREA_TY_NM
TEMP_TREAT_SITE
LOC_NM
TEAM
PARK_UNIT
CLIENT
RECORDER
ROLE_NM
TRT_BEG_DT
TRT_END_DT
PHNLGY_NM
DPC_TX
SCNTFC_CD
EST_CVR_RT
TRT_QTY
SCNTFC_CD2
EST_CVR_RT2
TRT_QTY2
SCNTFC_CD3
EST_CVR_RT3
TRT_QTY3
SCNTFC_CD4
EST_CVR_RT4
TRT_QTY4
SCNTFC_CD5
EST_CVR_RT5
TRT_QTY5
REST_CL_NM
REST_CL_NM2
REST_CL_NM3
REST_CL_NM4
REST_CL_NM5
PERSON_HR
BUFFER_M
BUFDIR
NOTES

RevegetationComponent
AREA_TY_NM
TEMP_TREAT_SITE
LOC_NM
TEAM
PARK_UNIT
CLIENT
RECORDER
ROLE_NM
TRT_BEG_DT
TRT_END_DT
PHNLGY_NM
DPC_TX
SCNTFC_CD
EST_CVR_RT
TRT_QTY
SCNTFC_CD2
TRT_QTY2
EST_CVR_RT2
SCNTFC_CD3
EST_CVR_RT3
TRT_QTY3
SCNTFC_CD4
EST_CVR_RT4
TRT_QTY4
SCNTFC_CD5
EST_CVR_RT5
TRT_QTY5
STOCK_ME
VEG_UOM_NM
REVEG_PHNLGY_NM
SEEDLOT_NR
RVG_SCNTFC_CD
PERSON_HR
NOTES
BUFFER_M
BUFDIR

Appendix B: NISIMS Data Dictionary Structure

In the NISIMS Data Dictionary, each field includes a prefix identified by the type of feature collected (i.e. pt = point, ln = line, py = polygon). Only the photo point fields do not include a prefix.

NISIMSpt			
All Data	ptACSMODE_NM	ptBIO_WNDMPH_ME	ptAPP_UOM_NM
ptBEGIN_DT	**Infestation Land Uses**	ptBIO_SL_MOIS_NM	ptACTLUSE_QY
ptEND_DT	*ptLandUses*	ptBIO_WNDDRCT_CD	ptAGT_UOM_NM
ptTEAM	ptLU_CTGY_NM	**Chemical Data**	**Adjuvant Data**
ptPARK_UNIT	ptLU_CTGY_NM2	ptTRT_BEG_TM	*ptadjnum*
ptCLIENT	ptLU_CMT_TX	ptTRT_END_TM	ptADJ_TRADE_NM
ptRECORDER	**TreatmentData**	ptPUP_NR	ptADJ_ACTLUSE_QTY
ptROLE_NM	**ptCMP_TY_NM**	**ptCARR_TY_NM**	ptADJ_AGT_UOM_NM
ptBUFFER_M	ptAREA_TY_NM	**ptMIXVOL_ME**	ptAGT_APP_RT
ptLOC_NM	ptTEMP_TREAT_SITE	**ptMIXUOM_NM**	ptADJ_APP_UOM_NM
ptSURVEY	ptTRT_PHNLGY_NM	ptCHEM_RLSDRCT_TX	**Fire Data**
ptInvasives	ptTRT_DPC_TX	**ptDLVR_NM**	**ptINTNSTY_NM**
ptTreatment	ptTRT_PERSON_HR	**ptPTTRN_NM**	ptFUELMDL_TX
ptspeciesnum	**Biological Data**	ptEQ_TY_NM	**Manual Data**
Species	ptBUP_NR	ptEQ_OUT_RT	**ptMANL_CL_NM**
ptSCNTFC_NM	**ptBIO_SCNTFC_NM**	ptEQ_UOM_NM	**Mechanical Data**
ptEST_CVR_RT	ptSPC_USE_QY	ptWTRDIST_TX	**ptMECH_CL_NM**
ptPHNLGY_NM	ptPRTCMTH_TX	ptCHEM_FA_AIR_ME	**Restoration Data**
ptINFSTN_QY	ptBIO_RLSDRCT_TX	ptP_AFTER_QY	*ptrestnum*
ptQY_UOM_NM	ptSPC_USE_QY	ptHUMID_RT	**ptREST_CL_NM**
ptTRT_QTY	ptPRTCMTH_TX	ptCHEM_WNDMPH_ME	**Revegetation Data**
SurveyData	ptBIO_RLSDRCT_TX	ptCHEM_SL_MOIS_NM	**ptSTOCK_ME**
ptWSA_TY_NM	ptSOURCE	ptPRECIP_NM	**ptVEG_UOM_NM**
ptSURV_DPC_TX	ptHSTMATL_NM	**Chemical Agent Data**	ptREVEG_PHNLGY_NM
ptSURV_PERSON_HR	ptLFCYCLE_NME	*ptchemnum*	ptSEEDLOT_NR
InfestationData	ptCLLCNTY_NM	**ptTRADE_NM**	ptRVG_SCNTFC_NM
ptQT_MTHD_TX	ptCOLLECT_DT	ptMNFCTR_NM	**Notes**
ptSPFC_TX	ptCLSTATE_CD	**ptEPAREGNUM**	ptNOTES
ptPHYSLMT_TX	ptBIO_FA_AIR_ME	ptAGT_APP_RT	

Bold fields are required.

Italicized fields provide function to the data dictionary, and do not contain NISIMS data.

NISIMSln			
All Data	lnACSMODE_NM	lnBIO_SL_MOIS_NM	lnAGT_UOM_NM
lnBEGIN_DT	**Infestation Land Uses**	lnBIO_WNDDRCT_CD	**Adjuvant Data**
lnEND_DT	*lnLandUses*	**Chemical Data**	*lnadjnum*
lnTEAM	lnLU_CTGY_NM	lnTRT_BEG_TM	lnADJ_TRADE_NM
lnPARK_UNIT	lnLU_CTGY_NM2	lnTRT_END_TM	lnADJ_ACTLUSE_QTY
lnCLIENT	lnLU_CMT_TX	lnPUP_NR	lnADJ_AGT_UOM_NM
lnRECORDER	**TreatmentData**	**lnCARR_TY_NM**	lnAGT_APP_RT
lnROLE_NM	**lnCMP_TY_NM**	**lnMIXVOL_ME**	lnADJ_APP_UOM_NM
lnBUFFER_M	lnAREA_TY_NM	**lnMIXUOM_NM**	**Fire Data**
lnBUFDIR	lnTEMP_TREAT_SITE	lnCHEM_RLSDRCT_TX	**lnINTNSTY_NM**
lnLOC_NM	lnTRT_PHNLGY_NM	**lnDLVR_NM**	lnFUELMDL_TX
lnSURVEY	lnTRT_DPC_TX	**lnPTTRN_NM**	**Manual Data**
lnInvasives	lnTRT_PERSON_HR	lnEQ_TY_NM	**lnMANL_CL_NM**
lnTreatment	**Biological Data**	lnEQ_OUT_RT	**Mechanical Data**
lnspeciesnum	lnBUP_NR	lnEQ_UOM_NM	**lnMECH_CL_NM**
Species	**lnBIO_SCNTFC_NM**	lnWTRDIST_TX	**Restoration Data**
lnSCNTFC_NM	lnSPC_USE_QY	lnCHEM_FA_AIR_ME	*lnrestnum*
lnEST_CVR_RT	lnPRTCMTH_TX	lnP_AFTER_QY	**lnREST_CL_NM**
lnPHNLGY_NM	lnBIO_RLSDRCT_TX	lnHUMID_RT	**Revegetation Data**
lnINFSTN_QY	lnSPC_USE_QY	lnCHEM_WNDMPH_ME	**lnSTOCK_ME**
lnQY_UOM_NM	lnPRTCMTH_TX	lnCHEM_SL_MOIS_NM	**lnVEG_UOM_NM**
lnTRT_QTY	lnBIO_RLSDRCT_TX	lnPRECIP_NM	lnREVEG_PHNLGY_NM
SurveyData	lnSOURCE	**Chemical Agent Data**	lnSEEDLOT_NR
lnWSA_TY_NM	lnHSTMATL_NM	*lnchemnum*	lnRVG_SCNTFC_NM
lnSURV_DPC_TX	lnLFCYCLE_NME	**lnTRADE_NM**	**Notes**
lnSURV_PERSON_HR	lnCLLCNTY_NM	lnMNFCTR_NM	lnNOTES
InfestationData	lnCOLLECT_DT	**lnEPAREGNUM**	
lnQT_MTHD_TX	lnCLSTATE_CD	lnAGT_APP_RT	
lnSPFC_TX	lnBIO_FA_AIR_ME	lnAPP_UOM_NM	
lnPHYSLMT_TX	lnBIO_WNDMPH_ME	lnACTLUSE_QY	

Bold fields are required.

Italicized fields provide function to the data dictionary, and do not contain NISIMS data.

NISIMSpy			
All Data	**Infestation Land Uses**	pyBIO_SL_MOIS_NM	pyACTLUSE_QY
pyBEGIN_DT	*pyLandUses*	pyBIO_WNDDRCT_CD	pyAGT_UOM_NM
pyEND_DT	pyLU_CTGY_NM	**Chemical Data**	**Adjuvant Data**
pyTEAM	pyLU_CTGY_NM2	pyTRT_BEG_TM	*pyadjnum*
pyPARK_UNIT	pyLU_CMT_TX	pyTRT_END_TM	pyADJ_TRADE_NM
pyCLIENT	**TreatmentData**	pyPUP_NR	pyADJ_ACTLUSE_QTY
pyRECORDER	**pyCMP_TY_NM**	**pyCARR_TY_NM**	pyADJ_AGT_UOM_NM
pyROLE_NM	pyAREA_TY_NM	**pyMIXVOL_ME**	pyAGT_APP_RT
pyLOC_NM	pyTEMP_TREAT_SITE	**pyMIXUOM_NM**	pyADJ_APP_UOM_NM
pySURVEY	pyTRT_PHNLGY_NM	pyCHEM_RLSDRCT_TX	**Fire Data**
pyInvasives	pyTRT_DPC_TX	**pyDLVR_NM**	**pyINTNSTY_NM**
pyTreatment	pyTRT_PERSON_HR	**pyPTTRN_NM**	pyFUELMDL_TX
pyspeciesnum	**Biological Data**	pyEQ_TY_NM	**Manual Data**
Species	pyBUP_NR	pyEQ_OUT_RT	**pyMANL_CL_NM**
pySCNTFC_NM	**pyBIO_SCNTFC_NM**	pyEQ_UOM_NM	**Mechanical Data**
pyEST_CVR_RT	pySPC_USE_QY	pyWTRDIST_TX	**pyMECH_CL_NM**
pyPHNLGY_NM	pyPRTCMTH_TX	pyCHEM_FA_AIR_ME	**Restoration Data**
pyINFSTN_QY	pyBIO_RLSDRCT_TX	pyP_AFTER_QY	*lnrestman*
pyQY_UOM_NM	pySPC_USE_QY	pyHUMID_RT	**pyREST_CL_NM**
pyTRT_QTY	pyPRTCMTH_TX	pyCHEM_WNDMPH_ME	**Revegetation Data**
SurveyData	pyBIO_RLSDRCT_TX	pyCHEM_SL_MOIS_NM	**pySTOCK_ME**
pyWSA_TY_NM	pySOURCE	pyPRECIP_NM	**pyVEG_UOM_NM**
pySURV_DPC_TX	pyHSTMATL_NM	**Chemical Agent Data**	pyREVEG_PHNLGY_NM
pySURV_PERSON_HR	pyLFCYCLE_NME	*pychemnum*	pySEEDLOT_NR
InfestationData	pyCLLCNTY_NM	**pyTRADE_NM**	pyRVG_SCNTFC_NM
pyQT_MTHD_TX	pyCOLLECT_DT	pyMNFCTR_NM	**Notes**
pySPFC_TX	pyCLSTATE_CD	**pyEPAREGNUM**	pyNOTES
pyPHYSLMT_TX	pyBIO_FA_AIR_ME	pyAGT_APP_RT	
pyACSMODE_NM	pyBIO_WNDMPH_ME	pyAPP_UOM_NM	

Bold fields are required.

Italicized fields provide function to the data dictionary, and do not contain NISIMS data.

PhotoPts
TEAM
PARK_UNIT
Photo Data
photonum?
PHOTO
PHOTODATE
PURPOSE
PHOTODEG

Bold fields are required.

Italicized fields provide function to the data dictionary, and do not contain NISIMS data.

Appendix C: Links to NISIMS Files and Documents

NISIMS Web Interface:
https://irma.nps.gov/NISIMS

NISIMS Field Geodatabase:
https://irma.nps.gov/App/Reference/Profile/2216090

NISIMS Data Dictionary:
https://irma.nps.gov/App/Reference/Profile/2222335

NISIMS Species Lists:
NISIMS Invasive Plants List: https://irma.nps.gov/App/Reference/Profile/2222379
NISIMS Approved Biocontrol Agent Species List:
https://irma.nps.gov/App/Reference/Profile/2222380
NISIMS Revegetation Species List: https://irma.nps.gov/App/Reference/Profile/2222381

NISIMS Field and Domains Guide:
https://irma.nps.gov/DataStore/Reference/Profile/2229150

NISIMS Technical User Guide:
https://irma.nps.gov/DataStore/Reference/Profile/2229151

APCAM to NISIMS Crosswalk:
https://irma.nps.gov/App/Reference/Profile/2216092