

Field SWAT is designed to map SWAT simulations from a HRU layer to a user-defined field boundaries layer. The tool ingests spatial and nonspatial SWAT outputs and helps in visualizing them at the field scale using four different aggregation methods.

<https://saraswat-swat.rcac.purdue.edu>

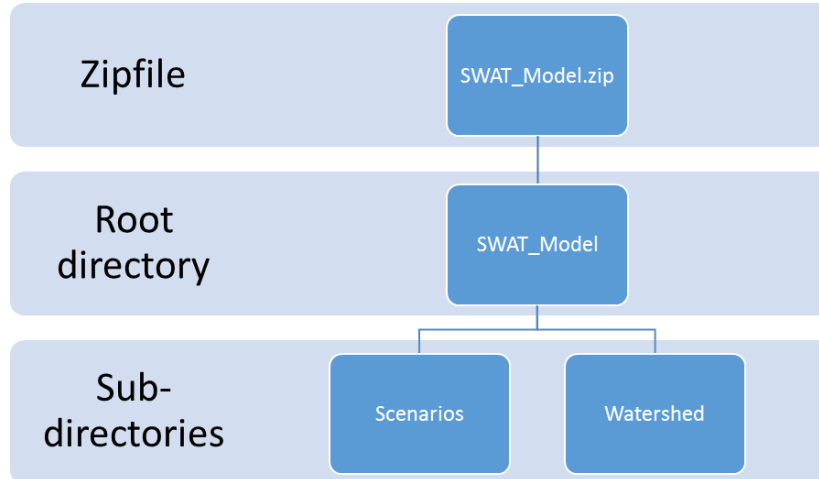
Field SWAT

User Manual

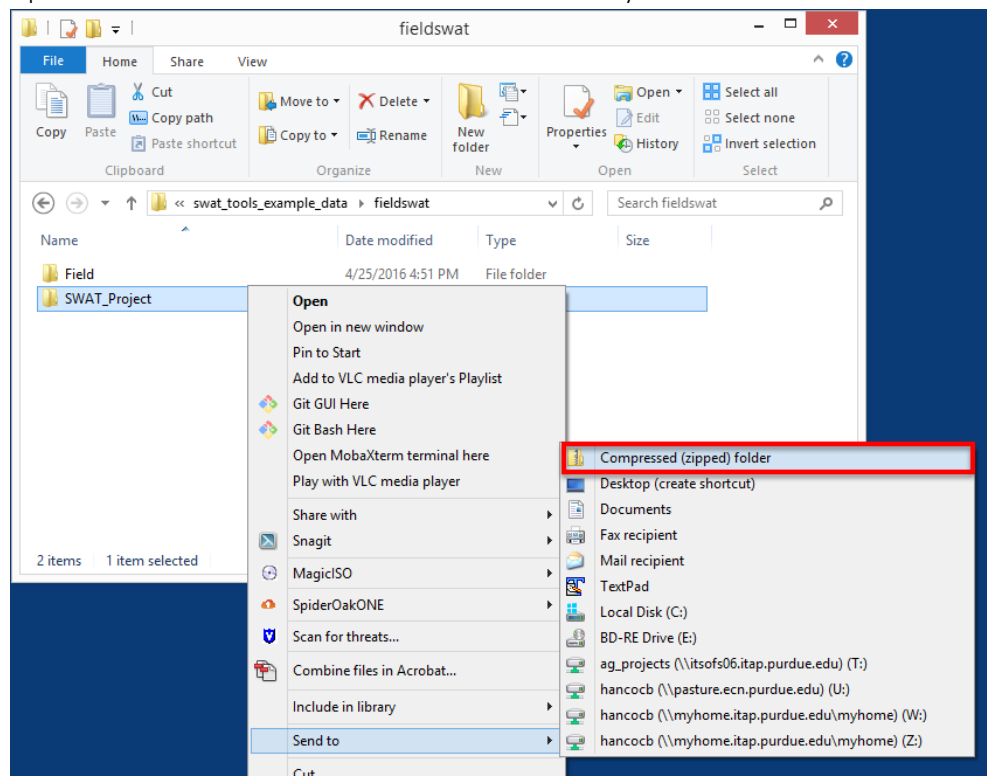
Last Revised: 05/17/2016

Step 1 – SWAT Model Input

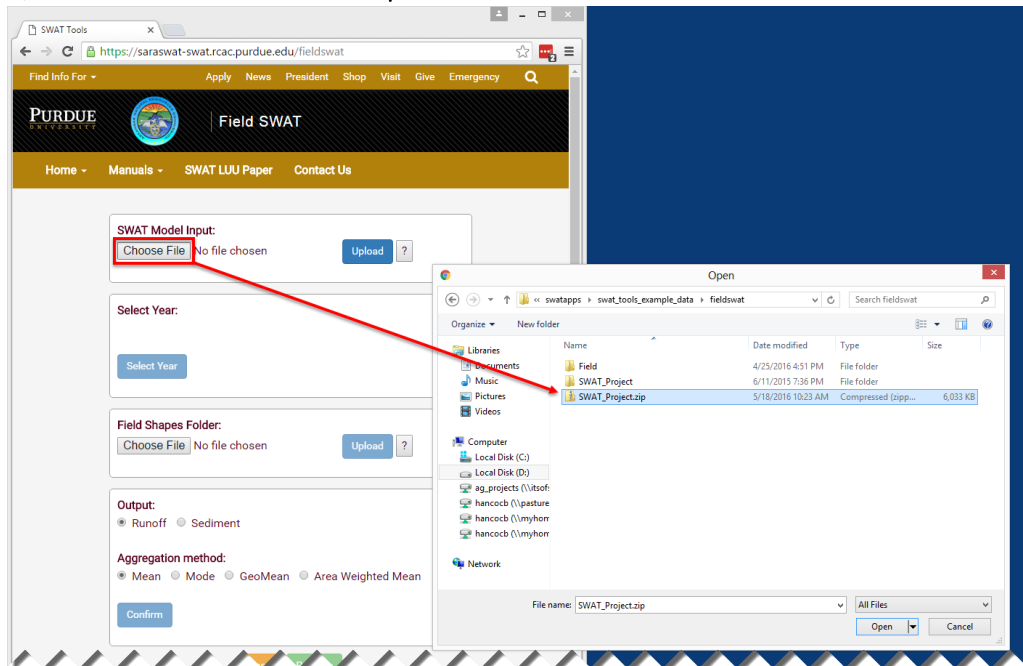
1. The first file you will need to upload is a zipped copy of your SWAT model. The zipfile should be provided with the same name as the directory containing the SWAT model. For example, if your SWAT model is in a directory named “SWAT_Model”, the zipfile should be named “SWAT_Model.zip.” It is necessary that the SWAT model directory has the “Scenarios” and “Watershed” sub-directories and that those two directories contain all of their associated sub-directories and files. The next step will demo how to create a zipfile.



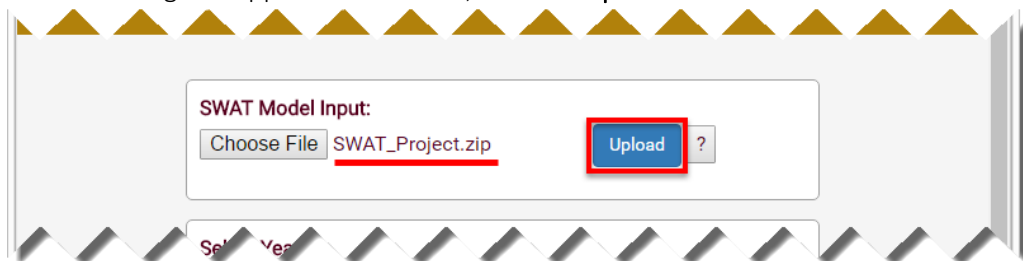
2. Make sure your SWAT model directory matches the above requirements. You can use any software you like to create the zipfile. In Windows 7 and up, you can simply right-click the directory and then select **Send to -> Compressed (zipped) folder** in the menu that appears. The zipfile name should match the SWAT model directory name.



- Click the **Choose File** button in the **SWAT Model Input** section to start the process of uploading your zipped SWAT model. Navigate to the location of your zipped SWAT model and double-click it, or click it once and click the **Open** button.



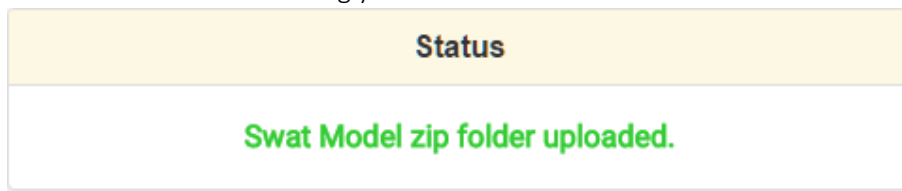
- After selecting the zipped SWAT model, click the **Upload** button.



- The speed it takes to upload and unzip the file will be dependent on the transfer speed and the size of the file. A green checkmark will appear when the upload has successfully finished.



The **Status** frame located at the bottom of the page will be updated with relevant information as you use the tool. If there had been a problem with the shapefile, a message would have appeared in the **Status** frame informing you of the issue.



Step 2 – Select Year

1. When the SWAT model finishes uploading, the **Select Year** section will become available. It will also be populated with a list of years found in the SWAT model. Select the year you would like to perform analysis on and then click the **Select Year** button. The example data used for this guide only had one year available.

The screenshot shows the 'SWAT Model Input' section with three sub-sections:

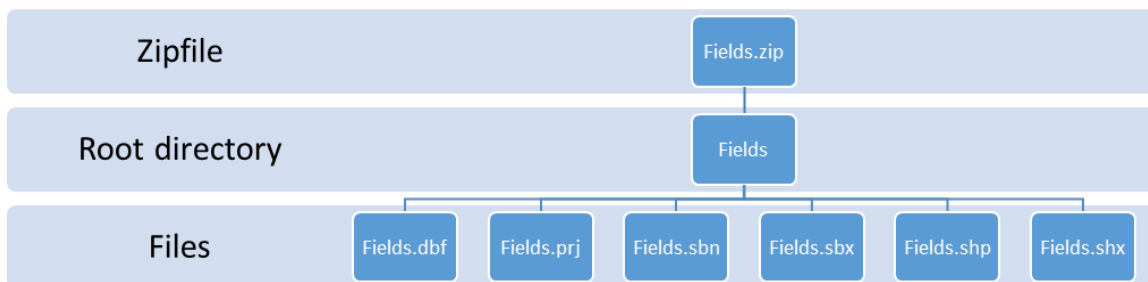
- SWAT Model Input:** Contains a 'Choose File' button, the text 'No file chosen', an 'Upload' button, a question mark icon, and a green checkmark icon.
- Select Year:** Contains a radio button next to the year '1999' (highlighted with a red box) and a 'Select Year' button (also highlighted with a red box).
- Field Shapes Folder:** Contains a 'Choose File' button, the text 'No file chosen', an 'Upload' button, and a question mark icon.

2. A green checkmark will appear when the selection has been confirmed.

The screenshot shows the 'Select Year' section after confirmation. It contains the text 'Select Year:' and a 'Select Year' button. To the right of the button is a green checkmark inside a red circle, indicating successful selection.

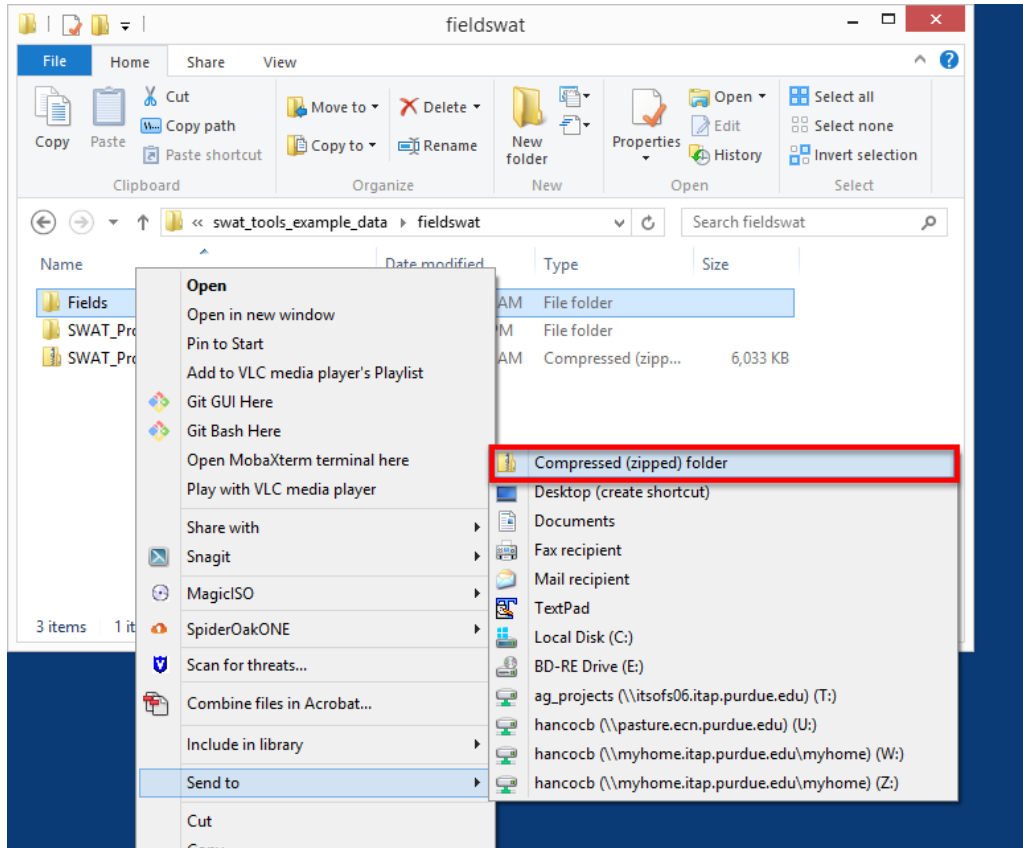
Step 3 – Field Shapes Folder

1. Your field data will need to be put into a zipfile before it is uploaded. The shapefile should be inside a directory with the same name as the shapefile. For example, if the shapefile is named "Fields", the directory containing the shapefile should be named "Fields." You would then need to zip the "Fields" directory. The next step will demo how to create a zipfile.

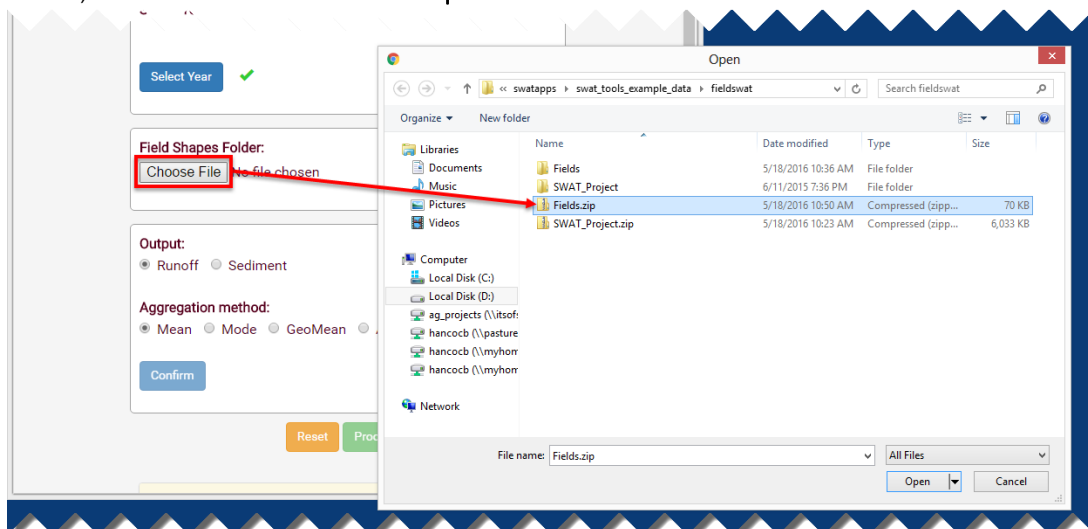


2. Once you have placed your fields shapefile into a directory sharing the same name as the shapefile, you will need to zip the directory. You can use any software you like to create the zipfile.

In Windows 7 and up, you can simply right-click the directory and then select **Send to -> Compressed (zipped) folder** in the menu that appears. The zipfile name should match the subbasin directory name.



3. Click the **Choose File** button in the **Field Shapes Folder** section to start the process of uploading your zipped fields shapefile. Navigate to the location of your zipped fields shapefile and double-click it, or click it once and click the **Open** button.



- After selecting the zipped fields shapefile, click the **Upload** button.

The screenshot shows the 'Field Shapes Folder:' section of the interface. It includes a 'Choose File' button, the text 'Fields.zip', and an 'Upload' button which is highlighted with a red rectangle. To the right of the 'Upload' button is a question mark icon. Above this section, a 'Select Year' dropdown menu is visible with a green checkmark next to it. Below the 'Field Shapes Folder' section, the 'Output:' section is partially visible, showing radio buttons for 'Runoff' and 'Sediment'.

- The speed it takes to upload and unzip the file will be dependent on the transfer speed and the size of the file. A green checkmark will appear when the upload has successfully finished.

This screenshot shows the 'Field Shapes Folder:' section after a successful upload. The 'Choose File' button is now labeled 'No file chosen'. The 'Upload' button is still present, but a green checkmark inside a red circle has appeared to its right, indicating the upload was successful. A question mark icon is also visible next to the 'Upload' button.

The **Status** frame located at the bottom of the page will be updated with relevant information as you use the tool. If there had been a problem with the shapefile, a message would have appeared in the **Status** frame informing you of the issue.

The screenshot shows the 'Status' frame, which has a yellow header with the word 'Status' in bold. Below the header, the text 'Fields shapefile uploaded.' is displayed in green, indicating a successful operation.

Step 4 – Output and Aggregation method

- This final step has you select an output and an aggregation method. First, select your **Output**. There are two choices: runoff and sediment.

The screenshot shows the 'Output' and 'Aggregation method' sections of the interface. The 'Output:' section has radio buttons for 'Runoff' and 'Sediment', with 'Runoff' selected and highlighted by a red rectangle. Below this, the 'Aggregation method:' section has radio buttons for 'Mean', 'Mode', 'GeoMean', and 'Area Weighted Mean', with 'Mean' selected. A 'Confirm' button is located below the aggregation methods. At the bottom of the interface, there are 'Reset' and 'Process' buttons.

2. Next select the **Aggregation method**. There are four choices: **Mean**, **Mode**, **GeoMean**, and **Area Weighted Mean**.

The screenshot shows the 'Field Shapes Folder' section with a 'Choose File' button, 'No file chosen' text, an 'Upload' button, a question mark icon, and a green checkmark. Below this is the 'Output' section with radio buttons for 'Runoff' (selected) and 'Sediment'. The 'Aggregation method' section is highlighted with a red box and contains radio buttons for 'Mean' (selected), 'Mode', 'GeoMean', and 'Area Weighted Mean'. A 'Confirm' button is below the aggregation methods. At the bottom are 'Reset' and 'Process' buttons.

3. After setting the **Output** and **aggregation method**, click the **Confirm** button to finalize the selection.

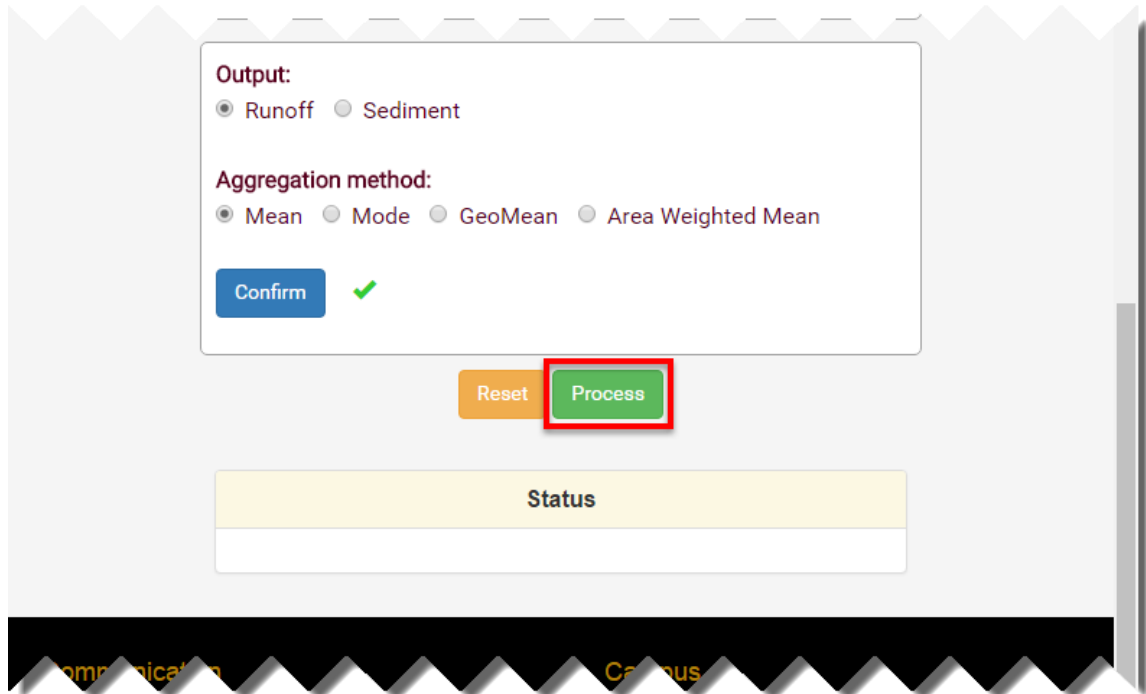
This screenshot is identical to the previous one, but the 'Confirm' button in the 'Aggregation method' section is now highlighted with a red box, indicating it should be clicked.

4. A green checkmark will appear when the upload has successfully finished.

The screenshot shows the 'Output' and 'Aggregation method' sections. The 'Confirm' button is now accompanied by a green checkmark inside a red circle, indicating successful completion.

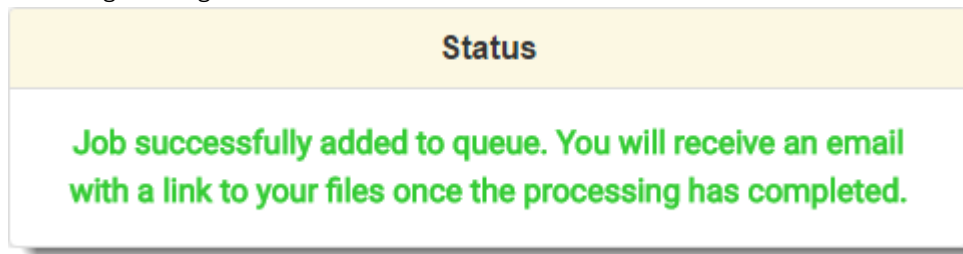
Step 5 – Process

1. Once all of the inputs have been entered, click the **Process** button to submit the job request.



The screenshot shows the 'Process' step of the FIELD SWAT web interface. It features a form with two sections: 'Output:' with radio buttons for 'Runoff' (selected) and 'Sediment'; and 'Aggregation method:' with radio buttons for 'Mean' (selected), 'Mode', 'GeoMean', and 'Area Weighted Mean'. Below these is a blue 'Confirm' button with a green checkmark. Underneath the form are two buttons: an orange 'Reset' button and a green 'Process' button, which is highlighted with a red rectangular box. Below the buttons is a yellow 'Status' box that is currently empty.

2. Once the job has been successfully added to the queue, the **Status** frame will update to the following message:

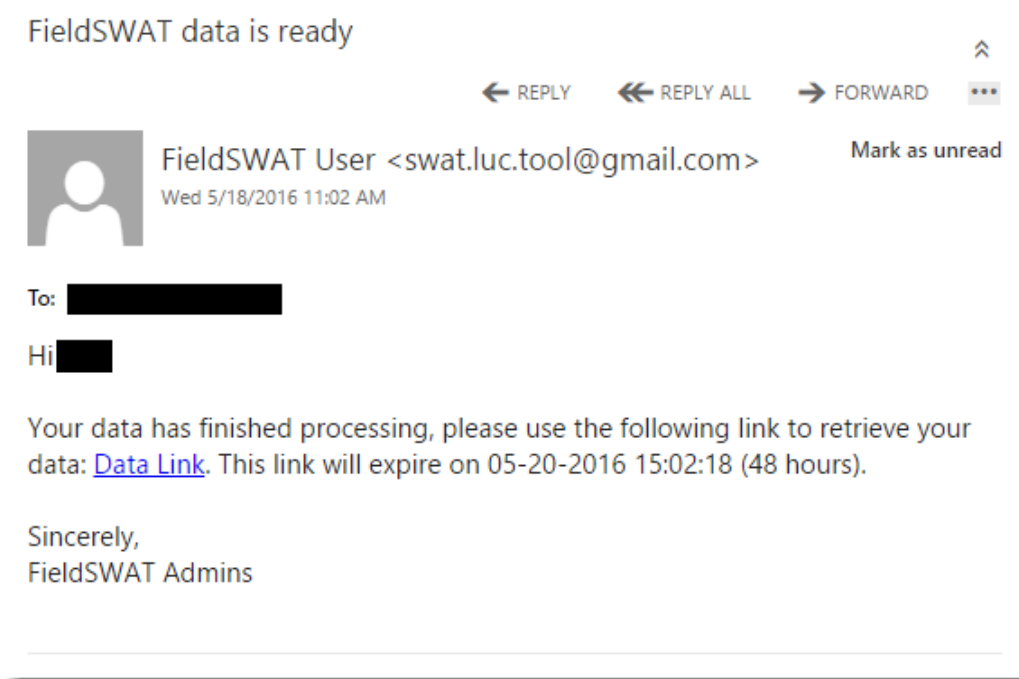


The screenshot shows the updated 'Status' frame. It has a yellow header with the word 'Status' in bold. Below the header, a green message box contains the text: 'Job successfully added to queue. You will receive an email with a link to your files once the processing has completed.'

At this point you can either click the **Reset** button (clears the form) and start uploading a new dataset or leave the page. When the job has finished running, an email will be sent to you containing a link to your results.

Step 6 – Downloading your data

1. You will receive an email when your data is ready for download. It will look similar to the below screenshot:



2. As indicated by the email message, you will have 48 hours to download your results before the results are permanently deleted. Click the "Data Link" to start the download. If you are not signed in to the site, you will be asked to do so before the download begins.

If you have any questions, please contact us at swat.luc.tool@gmail.com or saraswat@purdue.edu.