

Section 4: Importing and Reprojecting Data

Section Objective

Students will be exposed to the Import Tool to utilize the freely available Landsat-8 imagery available via the USGS website. This tool imports a tar.gz, unzips the data, selects the relevant bands and then stacks the band creating a single image/s output to be used directly in ERDAS IMAGINE processing packages.

Tools Used

- | | |
|----------------|---|
| • Import Tool | Simple and robust tool to convert data formats |
| • Batch Wizard | Turn the basic import tool into a batch import processor |
| • Reproject | Used to reproject images into different coordinates systems |

Class Notes

Importing Data

Objective:

To become familiarized with the IMAGINE Import Data Tool

Task 1: Import Data: Landsat 8 from USGS

Students will be exposed to the Import Tool to utilize the freely available Landsat-8 imagery available via the USGS website. This tool imports a **tar.gz**, unzips the data, band selects the relevant bands and then merges them for the single image/s output to be used directly in image processing packages.

1. Select **Import Data** from the **Manage Data** Tab | **Conversion** Group



The Import Dialog will open

2. Select Format: **Landsat-7 or Landsat-8 from USGS**

Input File: **lc811208220131511gn.tar.gz**

Output File: Will default to the same input file name but **.img** extension



As we want to customize this filename to something more useful, we will rename the output file from the default setting.

We will first need to review the metadata to obtain the images Acquired Date.

Please note the metadata information supplied by USGS Dates are in the format of *Year-Month-Day*

3. Open the text file: **LC81120822013151GN00_MTL.txt** in a standard text editor

This will give you the Acquired Date of the image and can be used in part of the output image name

Note as a short cut, this information is also available on the webpage used when downloading USGS Datasets. Note the DATE_ACQUIRED field

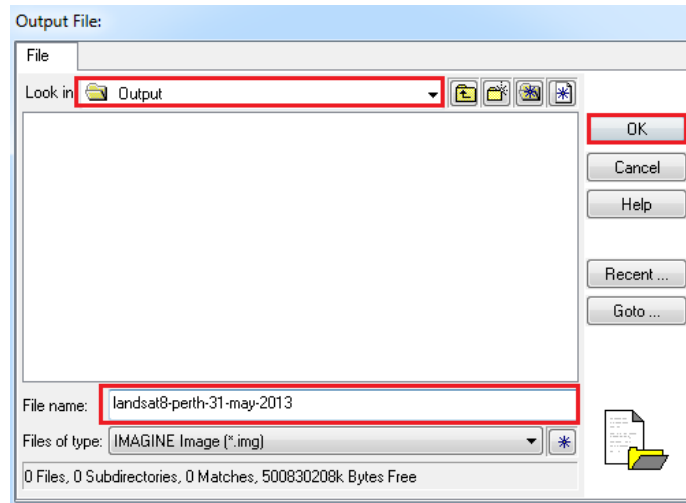
```
18 NADIR_OFFNADIR = "NADIR"
19 TARGET_WRS_PATH = 112
20 TARGET_WRS_ROW = 82
21 DATE_ACQUIRED = 2013-05-31
22 SCENE_CENTER_TIME = 02:07:31.2559558Z
```

4. Note down the DATE_ACQUIRED and **Close** the text file
5. Select the **Output File Icon** to change the default name of the output

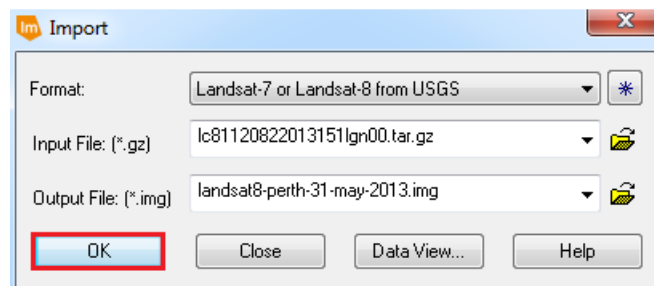


The Output File Options Dialog will open

6. Navigate to your TrainingData\Output Folder and name to:
Landsat8-perth-31-May-2013.img and click **OK**



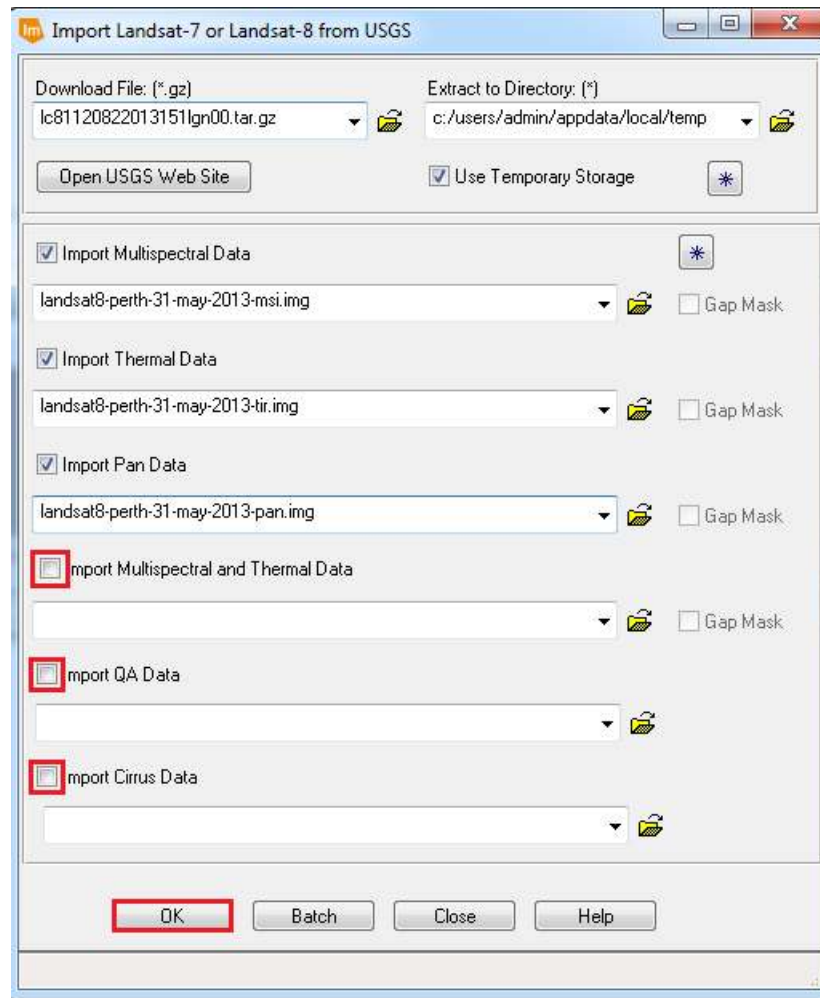
7. The Import Dialog will appear with the new output File Setting – Click **OK**



8. Now the “Import Landsat-7 or Landsat-8 from USGS” Settings dialog will open

This dialog box provides you the option to output several layer selected and stacked imagery included; Multispectral, Thermal, Panchromatic, Multispectral + Thermal, Q+A and Cirrus (Cloud) Data.

9. For this task, select only; Multispectral, Thermal and Pan Data. Click **OK** to begin import process.



10. Open these three imported files in a 2DView to assess the results.

Task 2: Import Data: Generic Binary Format

Data can also be supplied from other sources that need to be converted. This task will demonstrate how a student can import a Generic Binary image. This example will import a Multispectral Landsat subset image that has been subsetting and color corrected in generic binary format but is missing a header file. Because of the missing header file, this Generic Binary file will need to be imported to a useable format.

1. Select **Import Data** from the **Manage Data** Tab | **Conversion** Group

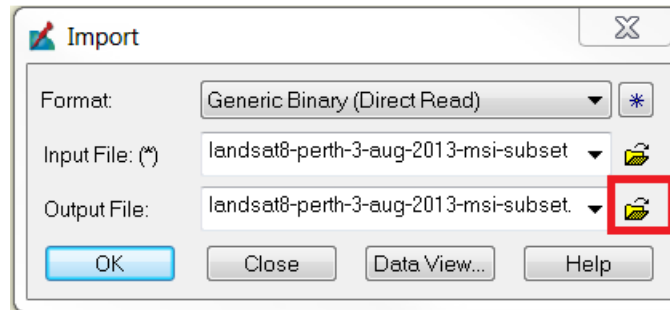


2. Select Format: **Generic Binary (Direct Read)**

Input File (*.hdr): TrainingData\landsat8-perth-3-aug-2013-msi-subset

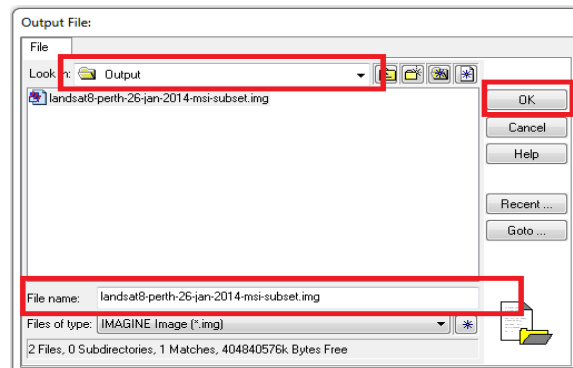
Output File: Will default to the same input file name but .img extension

Change output location by selecting the **Output Folder Icon**



3. Navigate to your TrainingData\Output Folder and

Save As: **landsat8-perth-26-jan-2013-msi-subset.img** Click **OK**

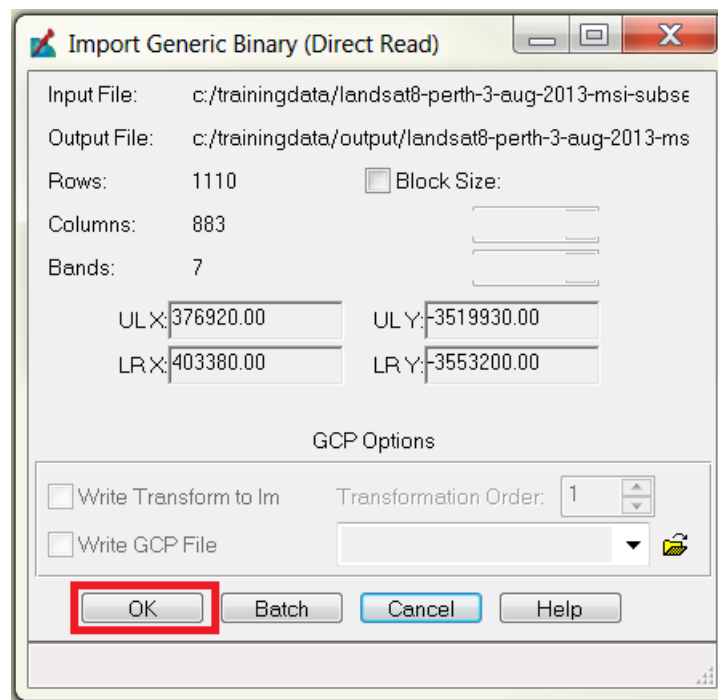


4. This will take you back to the Import Dialog, Click **OK**



A final summary screen will appear summarizing the import details

5. On the **Import Generic Binary (Direct Read)** Dialog, Click **OK**



6. Once complete, open output image in a **clear 2DView**

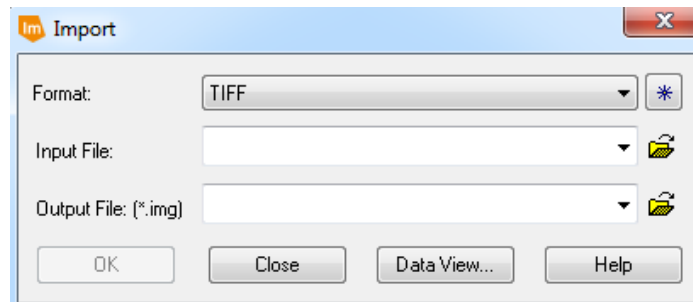
Task 3: Import Data: Batch Import TIF to ECW

This task will illustrate how you can batch import one file format to another

1. Select **Import Data** from the Manage Data Tab | Conversion Group

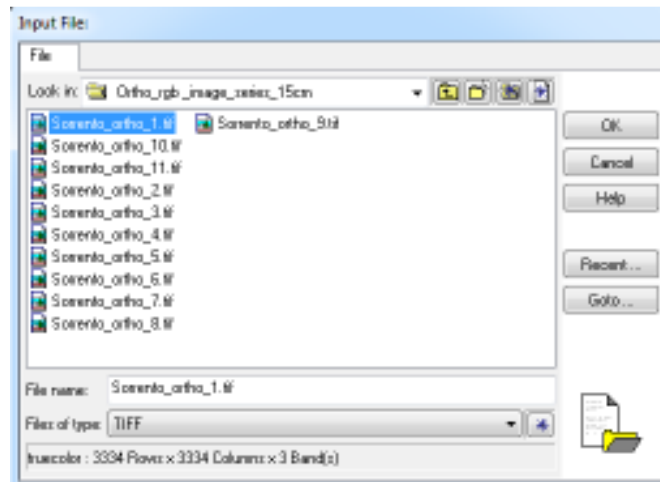


2. The **Import Dialog** box will open. Select Format: **TIFF**



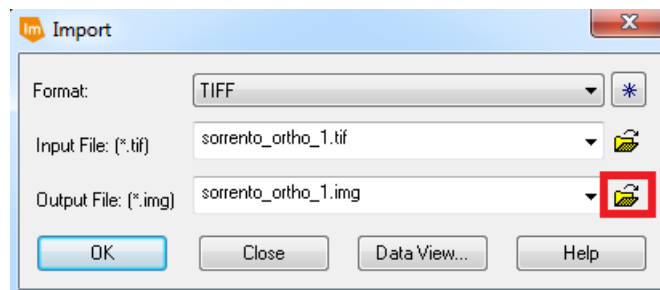
3. Set Input File: TrainingData\Importing and Reprojecting Data \ ***Sorrento_ortho_1.tif***

4. Click **OK** on the Input File Dialog Box

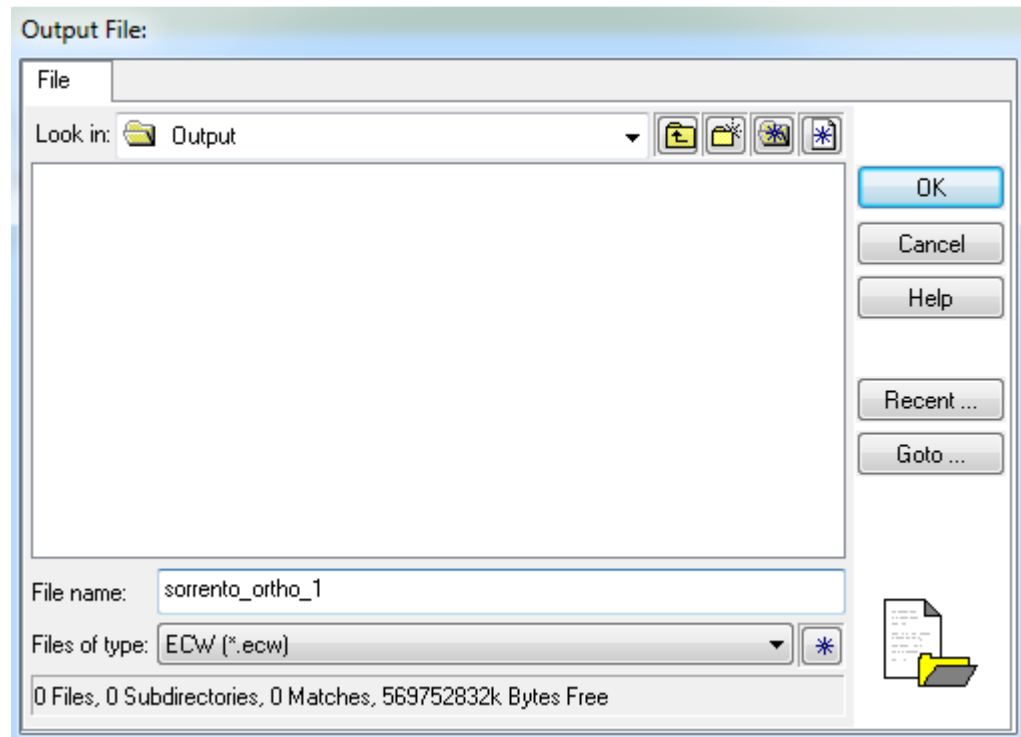


The Default Output File will be the ***input-file-name.img***

5. Click on the **Output File Icon** to change Output File Type

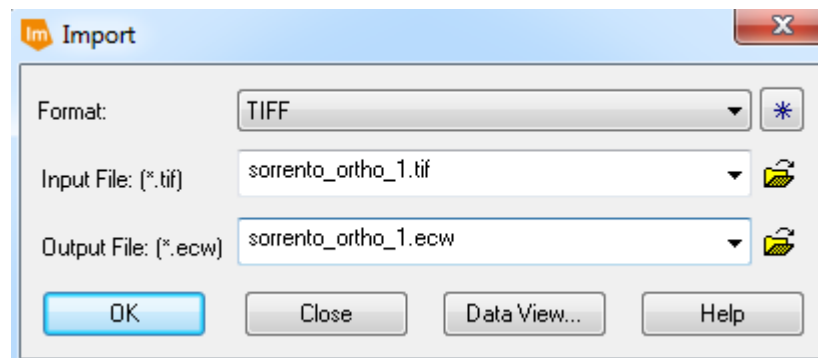


6. Navigate to TrainingData\Output Folder and set output as **Sorrento_ortho_1.ecw**

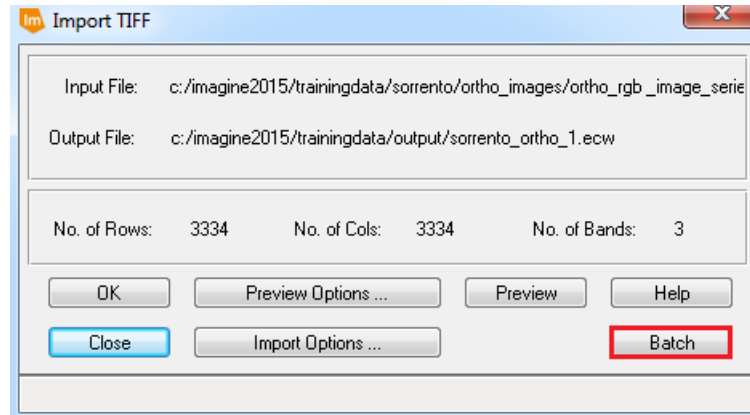


7. Click **OK** to close the Output File Dialog Box

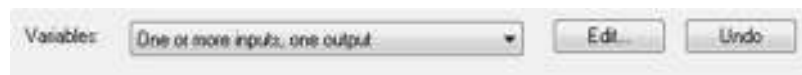
8. Check the settings are OK as per screenshot and click **OK** on the Import Dialog



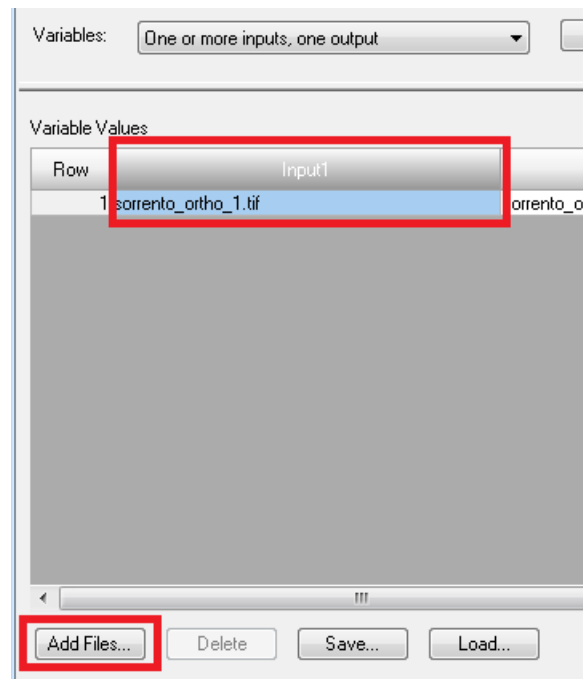
9. The Import TIFF Summary will appear, Click **Batch**



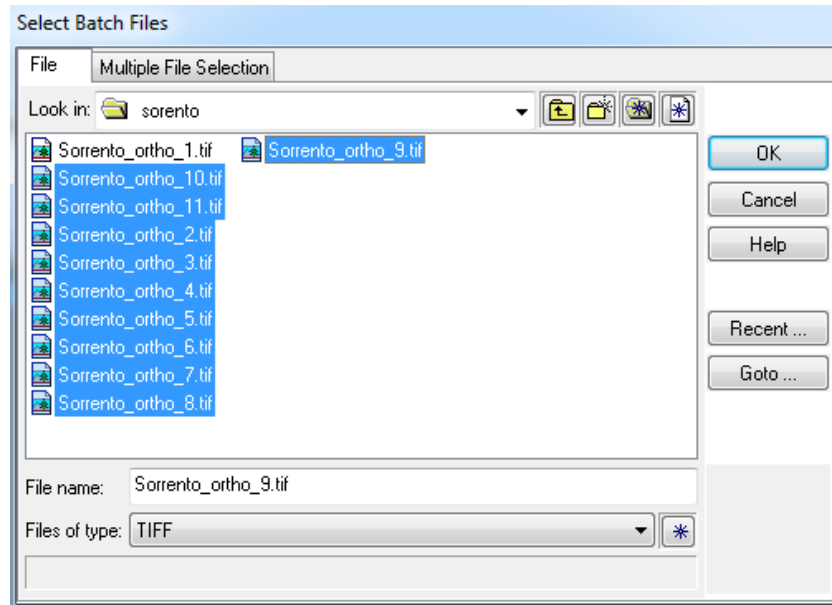
10. Set Variables to **One or more inputs, one output**



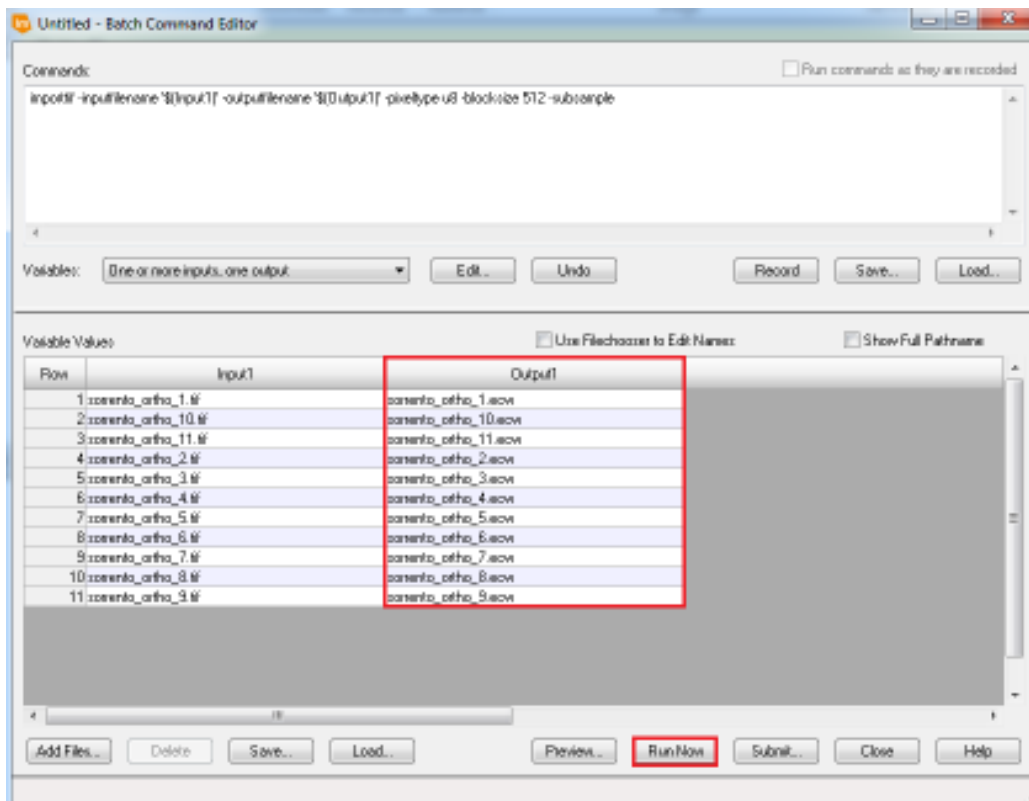
11. Highlight the Column Input1 and Click **Add Files**



12. Select the remaining Sorrento Images and Click **OK**




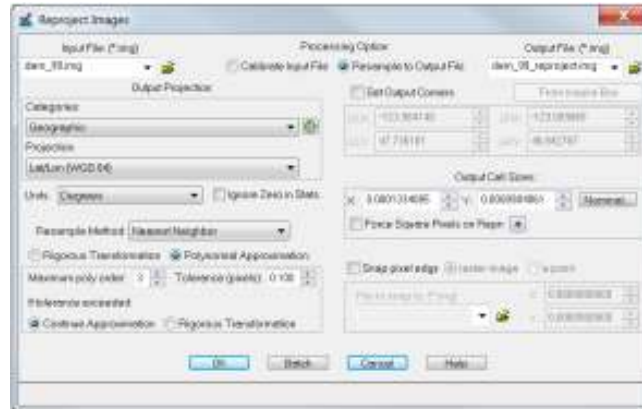
13. As the output file names did not change, IMAGINE has automatically assumed what your output file names should be. Check the Input1 and Output1 names match screenshot and click **Run Now**





14. Once the processes complete, open some of the images to assess the result.

Task 4: Reprojecting Images


1. From the eWorkspace, select the **Raster** tab and then click the  **Reproject** button.
2. Select **dem_99.img** as the Input File and name the output file **dem_99_reproject.img**.
3. Leave the **Categories** set to **Geographic**.
4. Change the **Projection** to **Lat/Lon (WGS 84)**.



5. Click **OK** to run the reprojection.
6. Open a new Viewer with two equal Views.
7. In the first Viewer, open **dem_99.img**.
8. In the second Viewer, open **dem_99_reproject.img**.
9. Click on the  **Metadata** button to examine the new projection.
10. Activate the first View. In the **View** group on the **Home** tab, click and select **Properties** button .



Click the Properties icon to access the Projection Chooser

11. Select the **Standard** tab.
12. Change the **Categories** to **Geographic**.
13. Change the **Projection** to **Lat/Lon (WGS 84)**. Click **OK**.
14. Click the  **Fit to Frame** button.
15. **Clear** all views.

Class Notes

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