

Using USGS Imagery with GeoConvert

Welcome

Welcome to the GeoConvert tool tutorial for using USGS Imagery. In this tutorial you will learn the steps to add your very own photo-real scenery to Aerofly FS2 so that you can fly over your own special areas of your choice. Please understand that this tutorial may change pending any changes to the tool and its processes. More will also be added to the tutorial as further features are added. We hope that you enjoy your newly realized freedom. Happy Flying!

This tool is not a simple plug and play application, you may need some practice to be successful. Please post any issues that you may be having onto the forum where the community can assist you.

Prerequisites

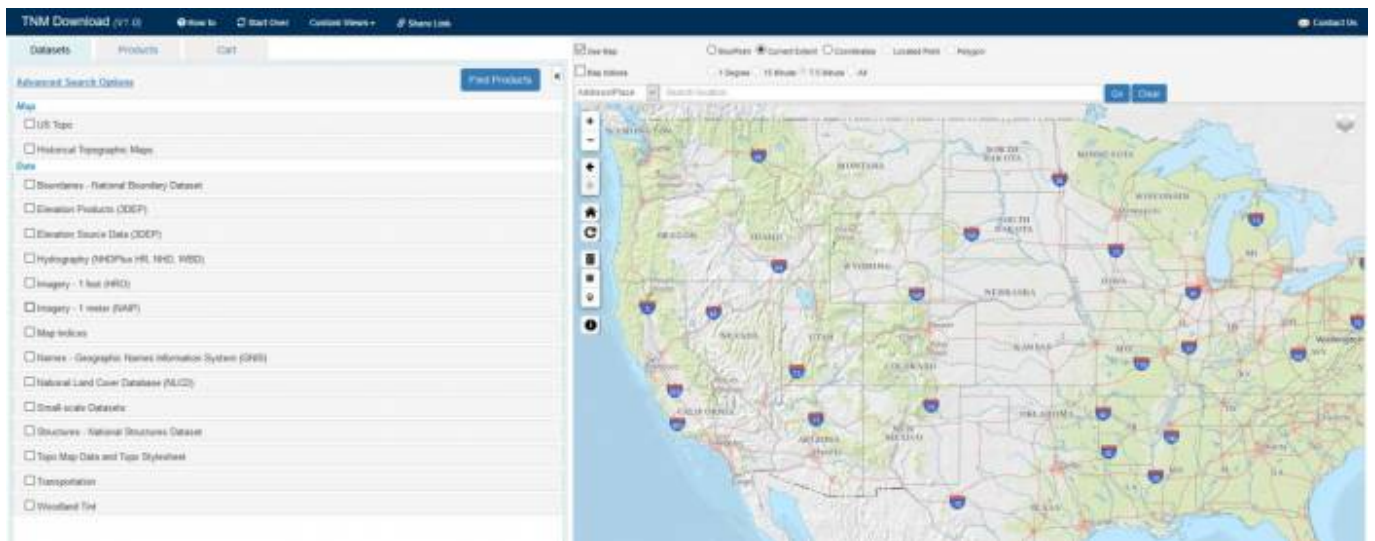
- **Aerofly FS2 simulator - Must be installed**
- **Aerofly FS2 SDK package - Download it from: [here](#)**
- **Download Manager and the instructions for the USGS imagery - Download it from: [here](#)**
- **Irfanview 64 (for converting .jp2 files) - Download it from: [here](#)**

The USGS Viewer

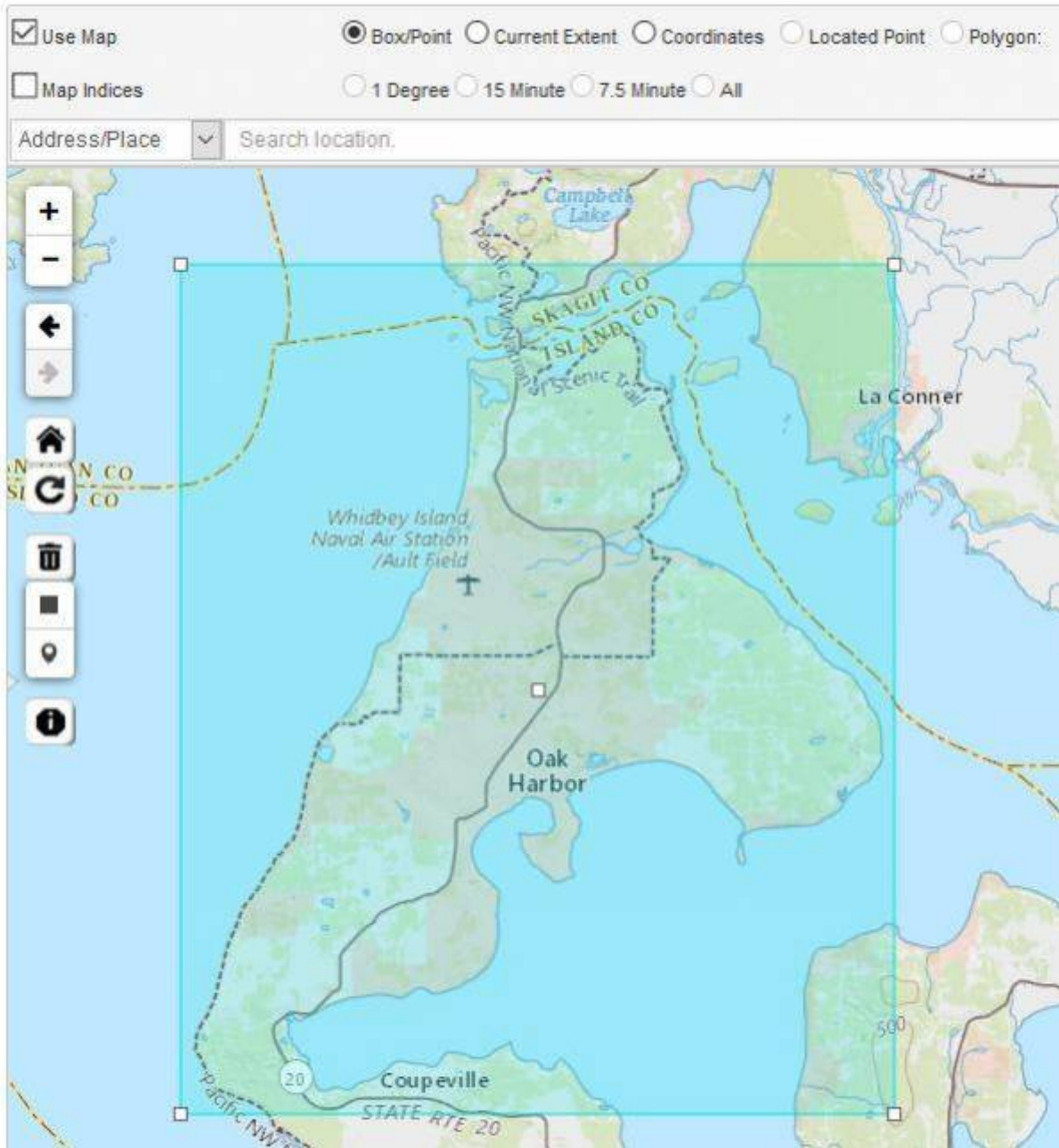
<https://viewer.nationalmap.gov/advanced-viewer/>



- Select the menu: Link to Data Download



- Zoom into a small area. Press the button Box/Point and draw a rectangle.



- Select Imagery - 1meter (NAIP) and press the button "find products"

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Datasets

[Advanced Search Options](#) [Find Products](#)

Map

- US Topo
- Historical Topographic Maps

Data


- Boundaries - National Boundary Dataset
- Elevation Products (3DEP)
- Elevation Source Data (3DEP)
- Hydrography (NHDPPlus HR, NHD, WBD)
- Imagery - 1 foot (HRO)
- Imagery - 1 meter (NAIP)

Show Preview

Product Search Filter

Data Extent
3.75 x 3.75 minute

File Format
JPEG2000



Description

- The Viewer then presents the result of the search








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Datasets **Products**

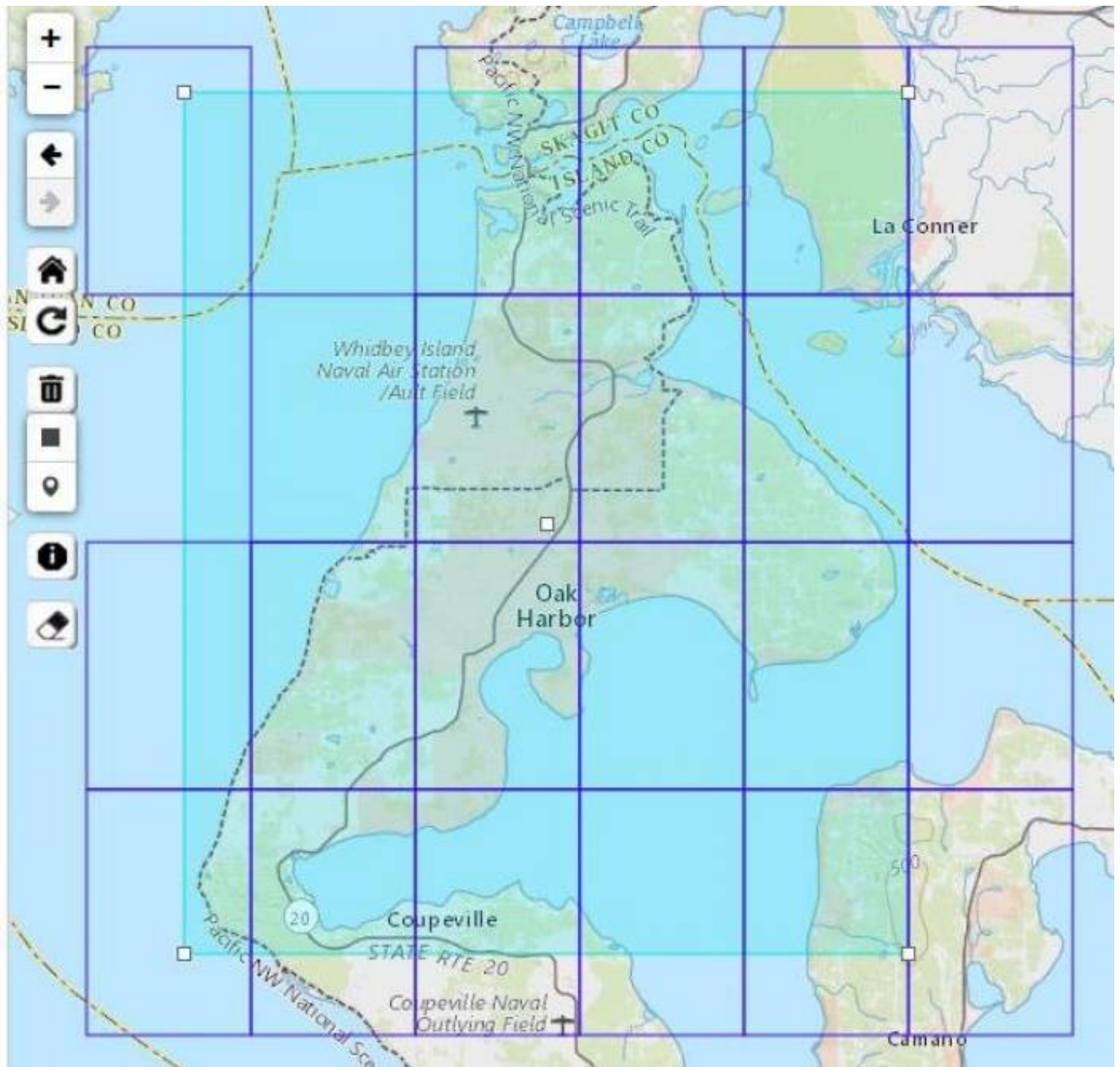
Available Products [Return to Search](#) [View Cart](#)

Imagery - 1 meter (NAIP) [Save as Text](#) [Save as CSV](#) **22** results

1

Preview	Product	Actions	Cart
Actions for all displayed products: Show Footprints			 Page
	FSA 10:1 NAIP Imagery m_4812243_sw_10_1_20150819_20151123 3.75 x 3.75 minute JPEG2000 from The National Map Published Date: 2016-01-11 Metadata Updated: 2016-11-13 Format: JPEG2000 (28.01 MB), Extent: 3.75 x 3.75 minute	Footprint Zoom To Info/Metadata Download	 
	FSA 10:1 NAIP Imagery m_4812243_nw_10_1_20150819_20151123 3.75 x 3.75 minute JPEG2000 from The National Map Published Date: 2016-01-11 Metadata Updated: 2016-11-13 Format: JPEG2000 (28.03 MB), Extent: 3.75 x 3.75 minute	Footprint Zoom To Info/Metadata Download	 

- Select Show Footprints to see the image frames







You can now adjust your frame by selecting one of the edges, press the button 'Return to Search' and repeat the search again. If your area fits your requirements, press the button "+Page".


Available Products [Return to Search](#) [View Cart](#)

Imagery - 1 meter (NAIP) [Save as Text](#) [Save as CSV](#) **22** results

1

Preview	Product	Actions	Cart
Actions for all displayed products: Show Footprints			
	FSA 10:1 NAIP Imagery m_4812243_sw_10_1_20150819_20151123 3.75 x 3.75 minute JPEG2000 from The National Map Published Date: 2016-01-11 Metadata Updated: 2016-11-13 Format: JPEG2000 (28.01 MB), Extent: 3.75 x 3.75 minute	Footprint Zoom To Info/Metadata Download	  

The resulting image list will be added to the cart. Now view the cart by pressing 'View Cart'.

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Datasets Products **Cart**

[Export URLs to Text](#) [uGet Instructions](#)
[Export Items to CSV](#)

Code	Preview	Product Name
naip		FSA 10:1 NAIP Imagery m_4812243_sw_10_1_20150819_20151123 3.75 x 3.75 minute JPEG2000 from The National Map
naip		FSA 10:1 NAIP Imagery m_4812243_nw_10_1_20150819_20151123 3.75 x 3.75 minute JPEG2000 from The National Map
naip		FSA 10:1 NAIP Imagery m_4812244_sw_10_1_20150819_20151123 3.75 x 3.75 minute JPEG2000 from The National Map
naip		FSA 10:1 NAIP Imagery m_4812244_nw_10_1_20150819_20151123 3.75 x 3.75 minute JPEG2000 from The National Map
naip		FSA 10:1 NAIP Imagery m_4812243_ne_10_1_20150819_20151123 3.75 x 3.75 minute JPEG2000 from The National Map

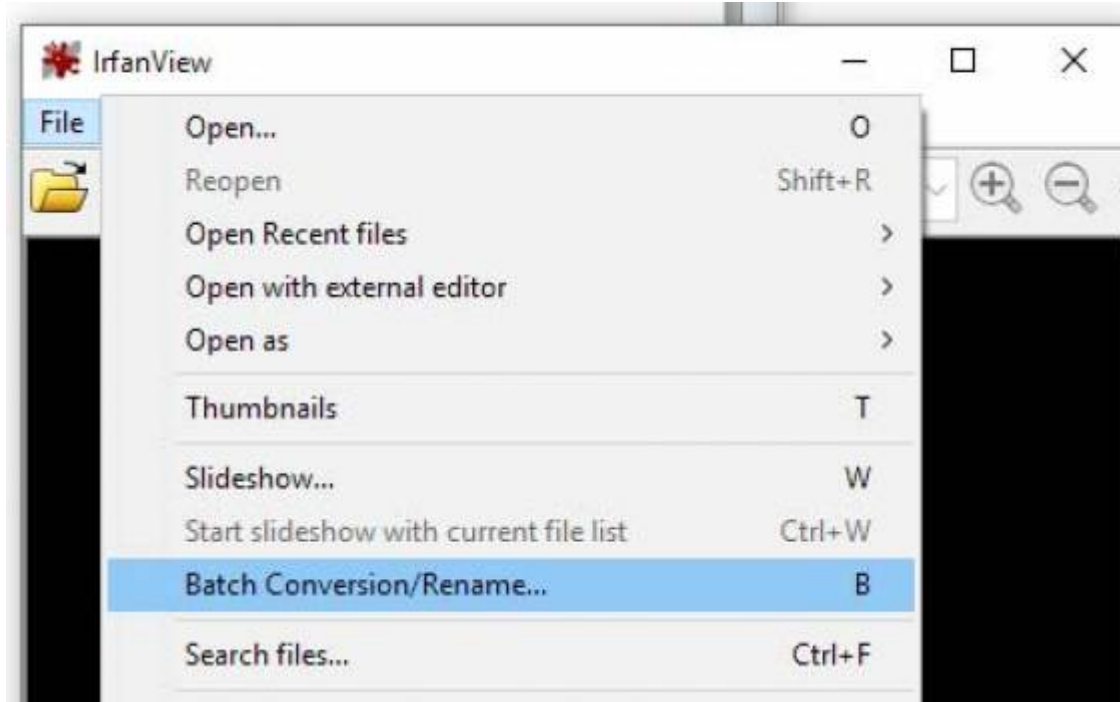
Press the button Export URLs to text. Now start the **uGet Download Manager** and follow the USGS description. Import the list and the download starts automatically. The resulting images have the file format **.JP2**.

Batch conversion

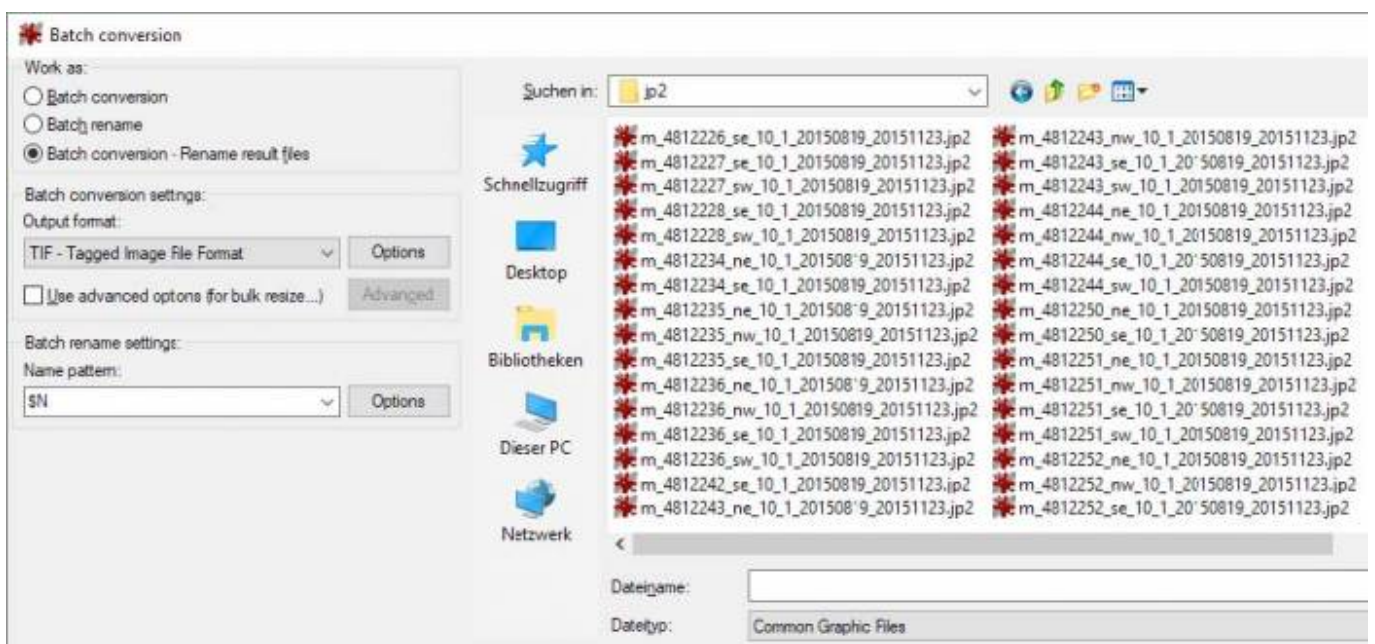
Batch conversion of **JP2** images into **TIF** (or BMP) file format, using freeware **Irfanview 64** (and plugins 64).

- Start Irfanview 64
- File - Batch Conversion/Rename

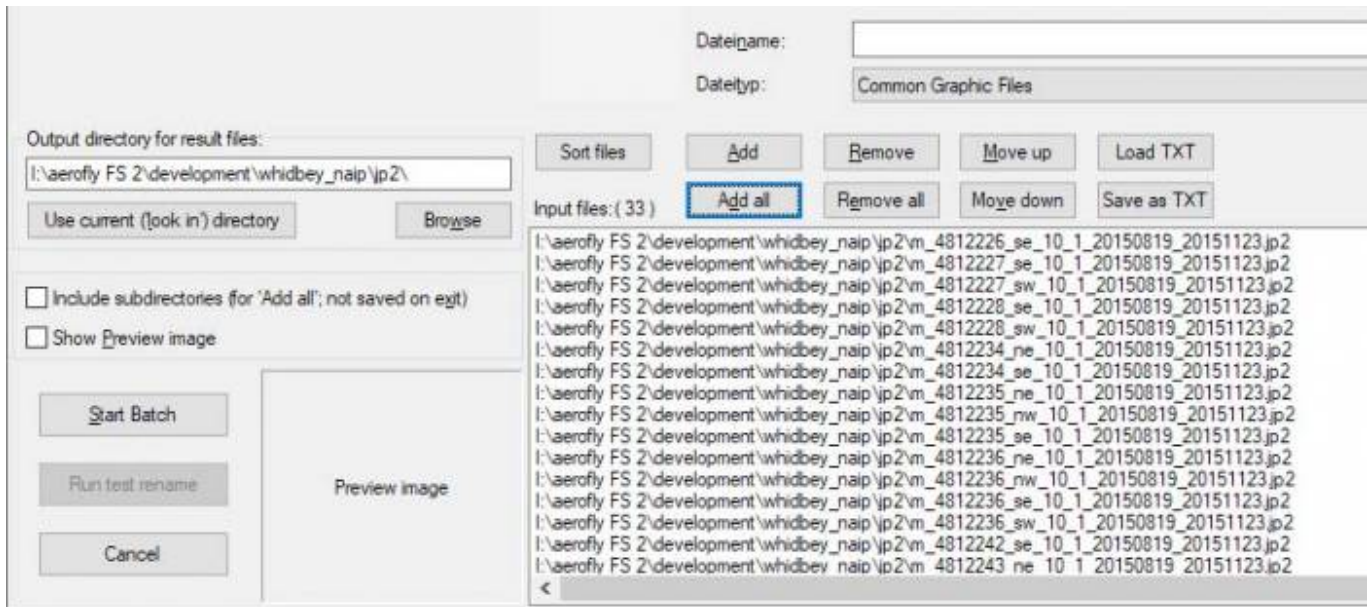




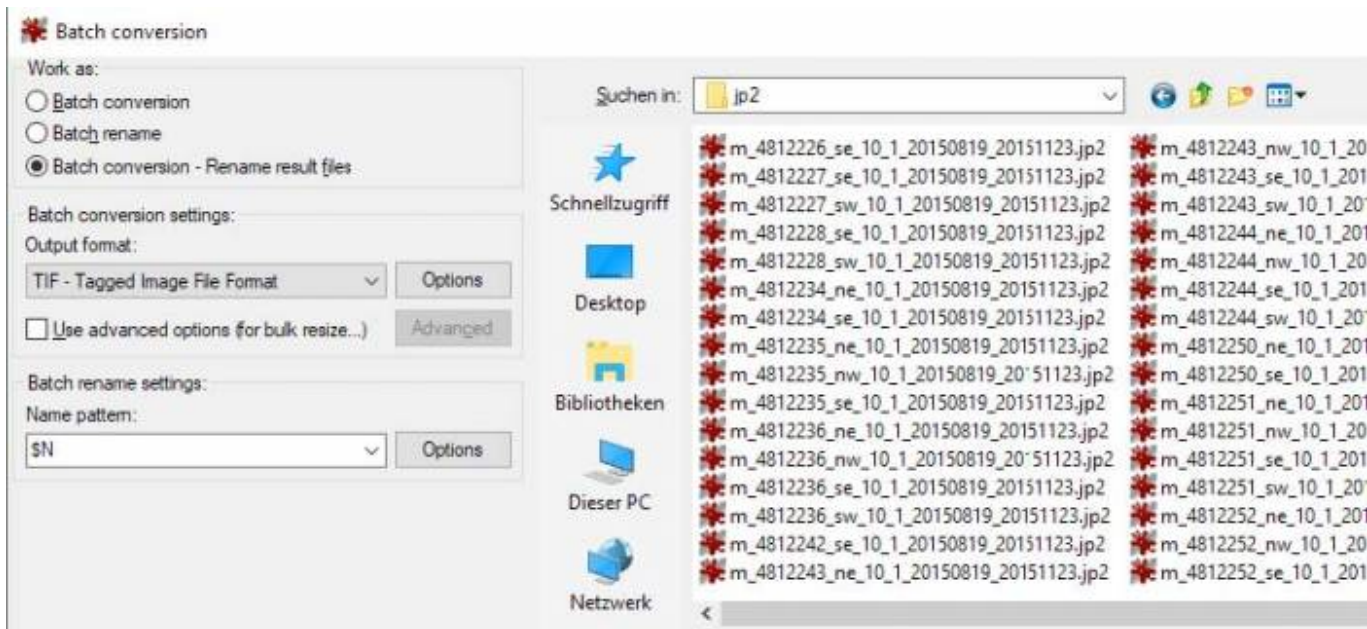
- Select your directory

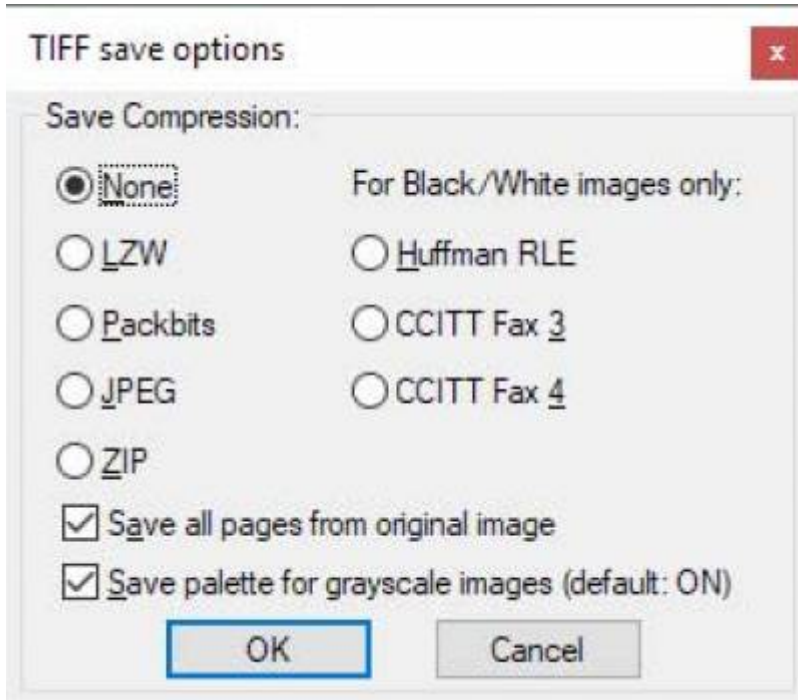


- Press the button 'add all'



- Set Output format to **TIF**
- Set Options to **No Compression, Save all pages from original image**

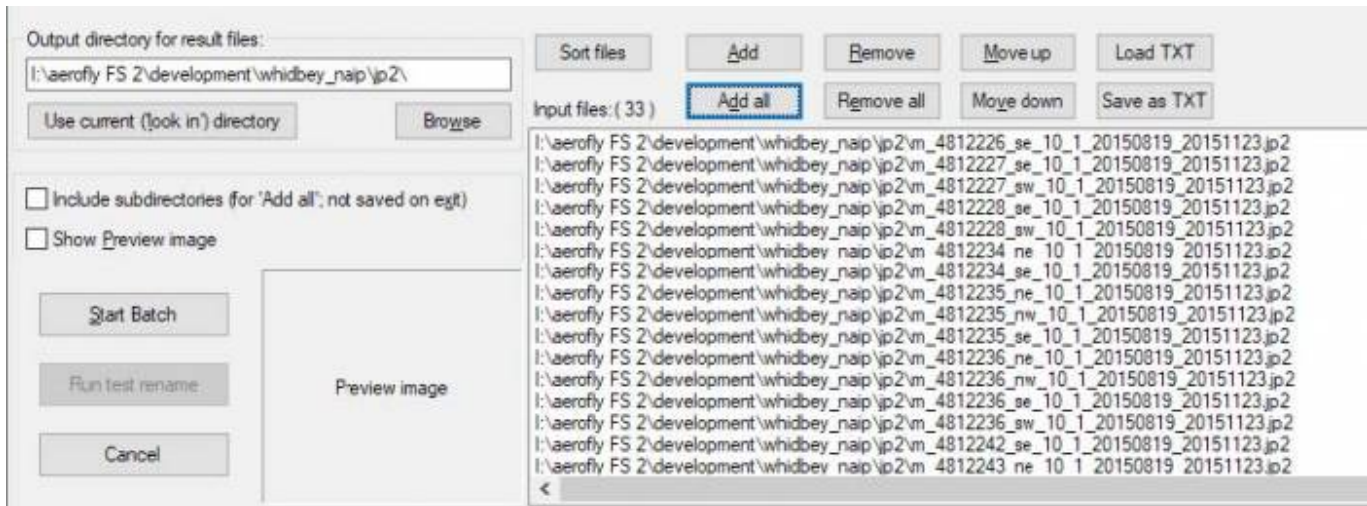




- Press button 'Use current directory' for result files



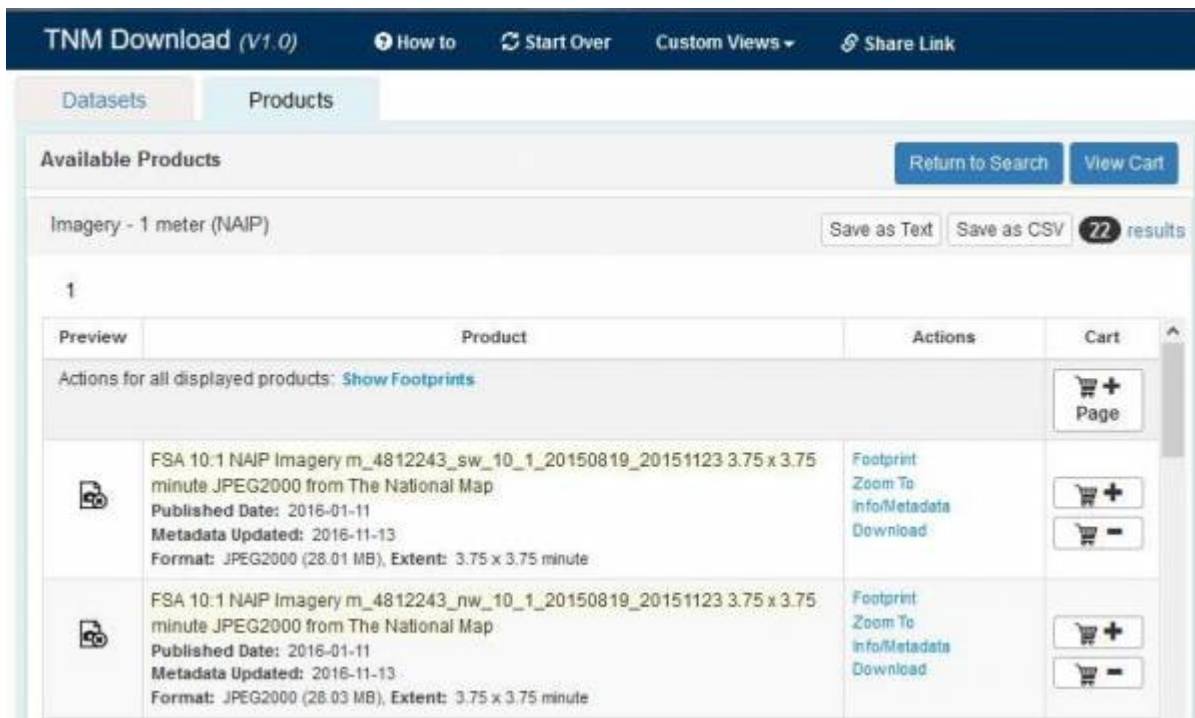
- Press 'Start Batch'



Irfanview now runs all conversions in the batch and returns the result as a text display.

Manually setup a coordinate file for the USGS image

The USGS viewer offers Info/Metadata about the selected image. You can view and/or download the .metadata. It has the same name as the image file with the extension .XML



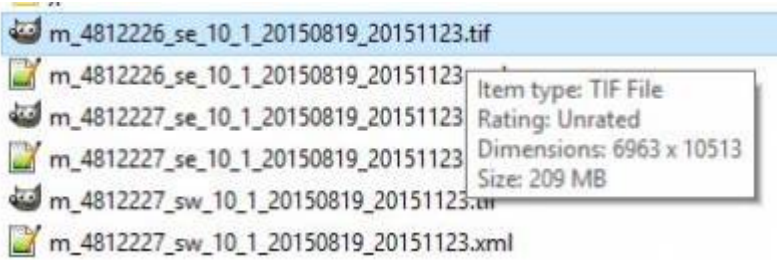
- The file contains the corners of the image.

```

<bounding>
  <westbc>-122.8125</westbc>
  <eastbc>-122.7500</eastbc>
  <northbc>48.5625</northbc>
  <southbc>48.5000</southbc>
</bounding>

```

- Additionally we need the pixel size of the current image



- Now let's calculate the data

The extension of the 1m NAIP images is 3.75 x 3.75 minutes.
 Calculating this into full degrees: $3.75 / 60 = 0.0625$ degrees extent per image.

Width resolution $0.0625 / 6963$ pixels = 0.000008976016085020824
 Height resolution $0.0625 / 10513$ pixels = 0.000005945020450870351

- This is the final .TFW file

```

1 0.000008976016085020824
2 0
3 0
4 -0.000005945020450870351
5 -122.8125
6 48.5625
  
```

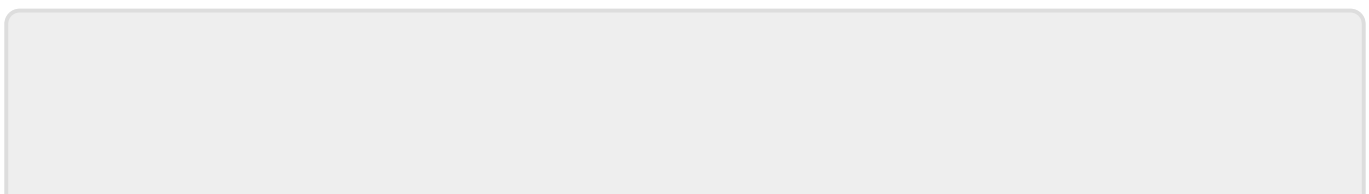
Line 1: The horizontal resolution degree/pixel
Line 2: Set to 0
Line 3: Set to 0
Line 4: The vertical resolution degree/pixel set to negative.
Line 5: The longitude coordinate of the topleft corner Line 6: The latitude coordinate of the topleft corner

Setup the config-region.TMC and run the Geoconvert program

Please refer to the other reference tutorials for finalizing your project. You can find these steps here:

[For setting up your TMC file](#)

[For running your Geoconvert Project](#)



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