Tutorial Set 4: Remote sensing

Exercise Site20_4-1 Multispectral images (Landsat8 OLI)

Learning objective: Downloading Landsat8 OLI multi-spectral images
Techniques: ArcCatalog data management
Data Source: USGS website

Part 1: Downloading Landsat8 OLI images

1. Must register for a USGS user account (create new account) before downloading the dataset.

2. Go to USGS Global Visualization Viewer (GloVis) site to search for Landsat8 OLI imagery.

3. Once the site is open, Choose Your Dataset (s) > Landsat8 OLI.
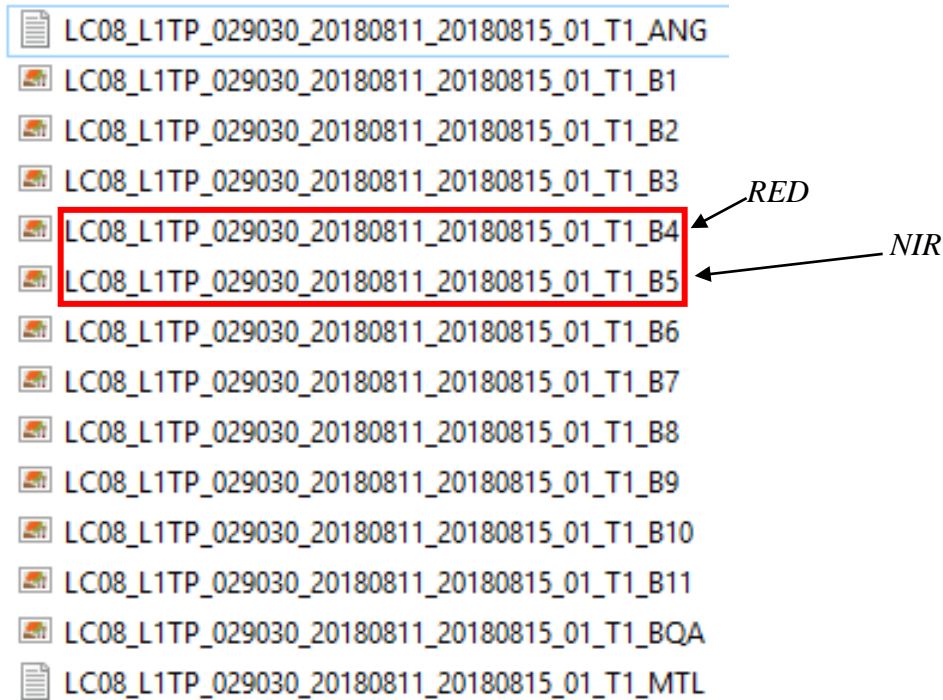

4. Search **Jump to** on top right, Enter **Lat/Lng** = **46**, **-71.4** and then click **Jump to Location**.

5. Enter date = **June 2018**, and then click **Apply** (cloud cover: 10>).

6. Click **Select** the dataset, and then click **View Metadata** (make sure your required properties).
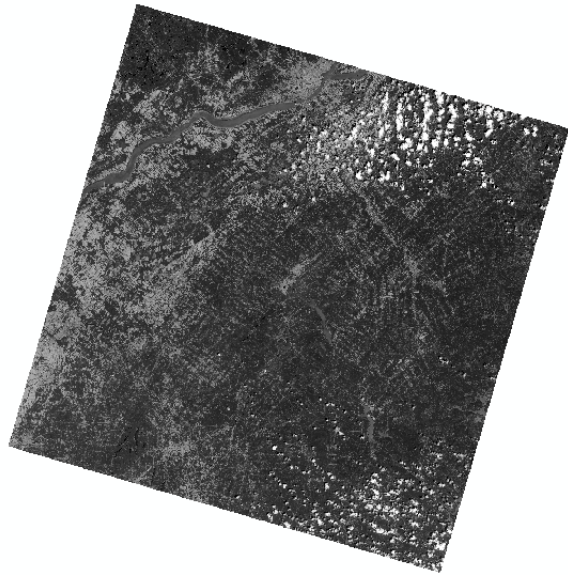
Metadata for LC08_L1TP_012029_20180719_20180731_01_T1

Field	Value
Landsat Product Identifier	LC08_L1TP_012029_20180719_20180731_01_T1
Landsat Scene Identifier	LC80120292018200LGN00
Acquisition Date	2018/07/19
Collection Category	T1
Collection Number	1
WRS Path	012
WRS Row	029
Target WRS Path	012
Target WRS Row	029
Nadir/Off Nadir	NADIR
Roll Angle	-.001
Date L-1 Generated	2018/07/31
Start Time	2018:200:15:25:14.9529950
Stop Time	2018:200:15:25:46.7229930
Station Identifier	LGN
Day/Night Indicator	DAY
Land Cloud Cover	.74
Scene Cloud Cover	.73

7. Then, click download

8. The downloaded dataset includes 11 images (.tiff format) and meta data file (MTL.txt):

LC08_L1TP_029030_20180811_20180815_01_T1_ANG
LC08_L1TP_029030_20180811_20180815_01_T1_B1
LC08_L1TP_029030_20180811_20180815_01_T1_B2
LC08_L1TP_029030_20180811_20180815_01_T1_B3
LC08_L1TP_029030_20180811_20180815_01_T1_B4 *RED*
LC08_L1TP_029030_20180811_20180815_01_T1_B5 *NIR*
LC08_L1TP_029030_20180811_20180815_01_T1_B6
LC08_L1TP_029030_20180811_20180815_01_T1_B7
LC08_L1TP_029030_20180811_20180815_01_T1_B8
LC08_L1TP_029030_20180811_20180815_01_T1_B9
LC08_L1TP_029030_20180811_20180815_01_T1_B10
LC08_L1TP_029030_20180811_20180815_01_T1_B11
LC08_L1TP_029030_20180811_20180815_01_T1_BQA
LC08_L1TP_029030_20180811_20180815_01_T1_MTL

9. Open **ArcCatalog**, and rename ***T1_B4.TIF*** to ***RED.TIF*** and ***T1_B5.TIF*** to ***NIR.TIF***.
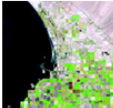
RED.TIF

High : 50100

Low : 0

NIR.TIF

High : 55765

Low : 0
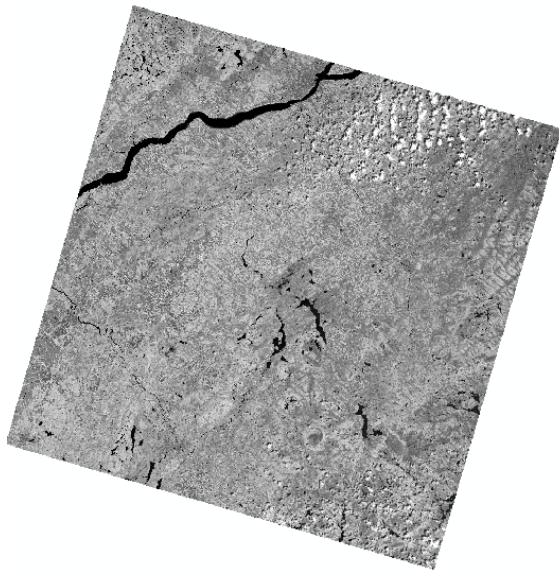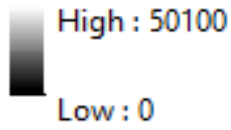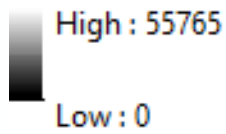
Note: Displayed below are some common band combinations in RGB comparisons of Landsat 5/7/8

		Landsat 7 Landsat 5	Landsat 8
	Color Infrared:	4, 3, 2	5,4,3
	Natural Color:	3, 2, 1	4,3,2
	False Color:	5,4,3	6,5,4