

Landsat Collection 2 EarthExplorer Help

Note: New download methods have been added (May 2023) to improve access to individual files, including adding files from multiple scenes/tiles to a Bulk Order. Previous methods have not changed, just new functions added.

Landsat Collection 2 (Level-1, Level-2, Analysis Ready Data (ARD), and Level-3 Science Products) products on EarthExplorer. Products include multiple files which may be downloaded individually or in a .tar bundle. The list of possible files will vary depending on Sensor, Level, and Product.

Data Types and Products

- The [Landsat Collection 2](#) webpage contains information concerning data type and products. The Data Format Control Book's (DFCB) are accessible from the webpage.
- Landsat Collection 2 Level-1, Level-2, Analysis Ready Data (ARD), and Level-3 Science Products Data Types
 - Collection 2 Level-1
 - L1GT -- Includes radiometric and geometric corrections
 - L1TP -- Includes radiometric, geometric, and precision correction
 - Collection 2 Level-2
 - L2SP -- Includes Surface Reflectance (SR), Surface Temperature (ST), ST intermediate bands, an angle coefficients file, and Quality Assessment (QA) Bands.
 - L2SR -- Includes Surface Reflectance (SR), an angle coefficients file, and Quality Assessment (QA) Bands.
 - Analysis Ready Data (ARD)
 - Tile Brightness Temperature (BT)
 - Tile Surface Reflectance (SR)
 - Tile Surface Temperature (ST)
 - Tile Top of Atmosphere (TOA)
 - Level-3 Science Products
 - Burned Area (BA)
 - Dynamic Surface Water Extent (DSWE)
 - Fractional Snow Cover Area (fSCA)
 - Fractional Snow Cover Area (fSCA) Statistics
- Downloads are available as a .tar bundle, which includes all available files. When downloading individual files, these are the most commonly used.
 - Spectral Bands in Cloud Optimized GeoTIFF (COG) format
 - Bands 1-11 (Landsat 8-9 OLI/TIRS)
 - Bands 1-8 (Landsat 7 ETM+)
 - Bands 1-7 (Landsat 4-5 TM)
 - Bands 1-4 (Landsat 4-5 MSS)
 - Bands 4-7 (Landsat 1-3 MSS)
 - Angle Files

- Solar Azimuth Angle (SAA)
- Solar Zenith Angle (SZA)
- Sensor Azimuth Angle (VAA)
- Sensor Zenith Angle (VZA)
- Angle Coefficient File
- Quality Assessment (QA)
 - Pixel Quality Assessment Band (QA_Pixel)
 - Radiometric Saturation and Terrain Occlusion QA Band (QA_RADSAT)
- Metadata
 - Material Library File (MTL) (Object Description Language-based format)
 - Extensible Markup Language (XML)

Landsat Collection 2 Download Methods

Information below pertains to Landsat Collection 2 download functions. Additional help documentation is available through [EarthExplorer](#) or directly from [EarthExplorer Help documents](#).

- **View Results**

The “Results” Tab () executes a search using the search criteria and displays the results.

The left side of the page displays the results panel with thumbnail and textual information for each scene returned from the search. The right side of the page displays the map interface with the identified area of interest (Figure 1).

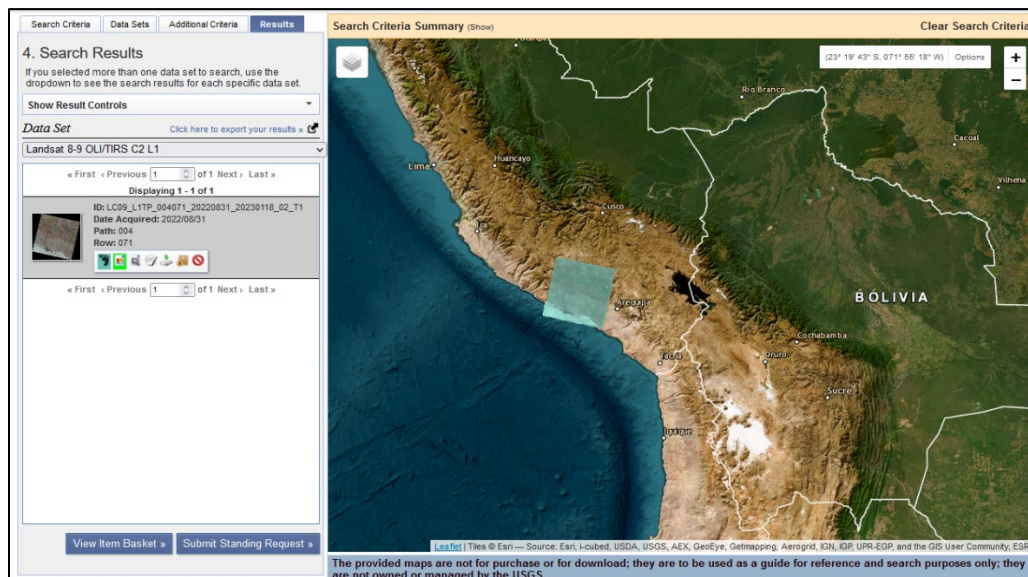
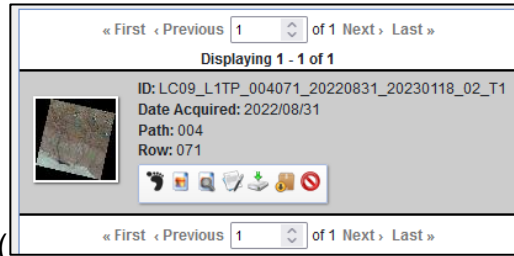



Figure 1 - Results

- **Download Options**



For a desired scene (), Click the “Download Options” icon  to display the available data. Users must be registered and logged in.

The Download Options box displays (Figure 2):

- **New Download Method** – Options to download individual files to bulk, directly download individual files, and Select Files.
- **Product Options** – Dropdown opens to list bundle and individual band/files
- **Download** – Click to download the Full-Resolution Browse.

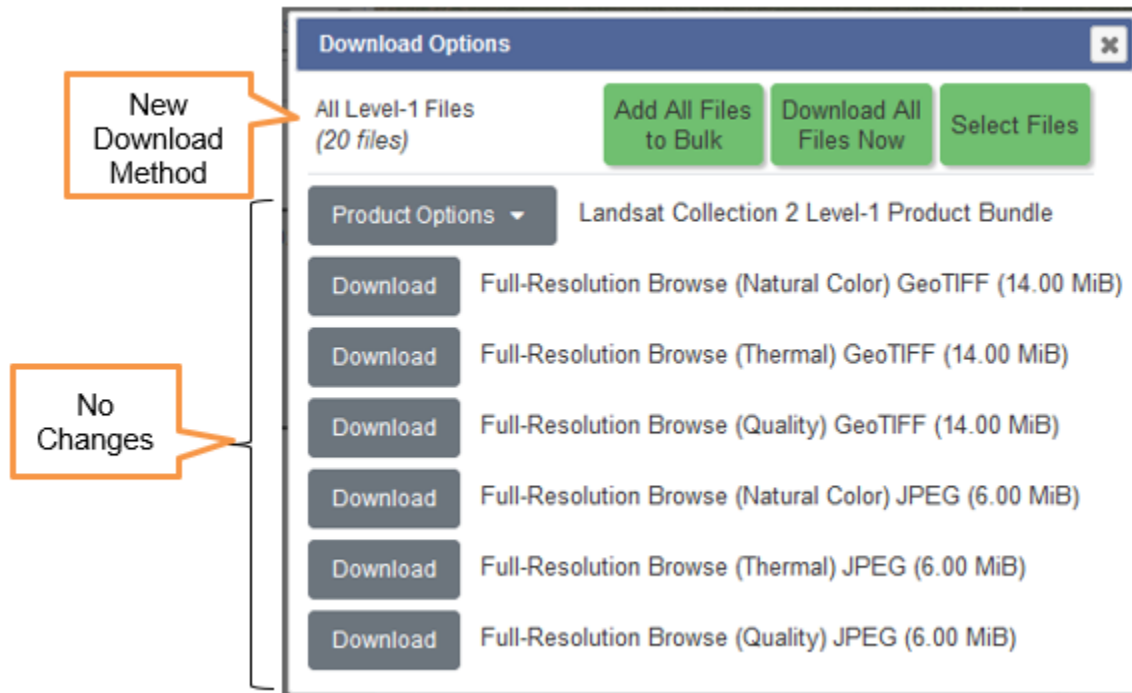
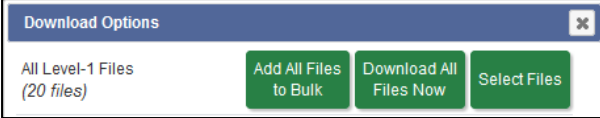
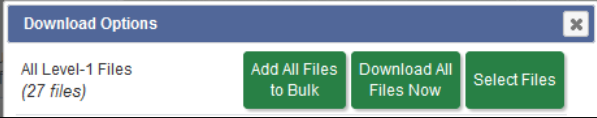
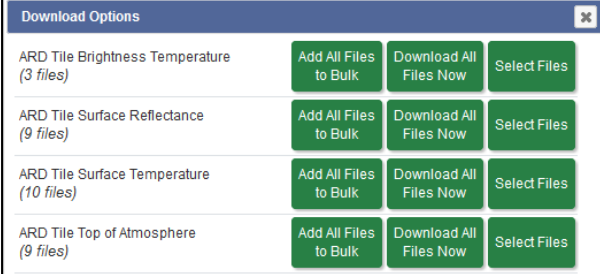
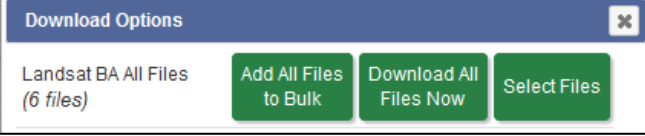


Figure 2 – Download Options Box

- **New Download Method** – Section above the Product Options dropdown offers an optional way to download and/or add to bulk Landsat Collection 2 data.
 - **Product and Number of Files** - Display how many individual files are available for the product selected. Examples:

| | |
|---|---|
|  <p>Example 1: Landsat 8-9 OLI/TIRS</p> |  <p>Example 2: Landsat 7 ETM+</p> |
|  <p>Example 3: Analysis Ready Data (ARD)</p> |  <p>Example 4: Burned Area</p> |

- **Add All Files to Bulk** -- Click (Figure 4) button to add all individual files to the Item Basket for Bulk download.



Figure 4: Add All Files to Bulk

- **Download All Files Now** – Click button (Figure 5) and the system starts downloading each of the individual files one at a time. **Note of Caution:** Depending on your browser settings, this may open a new tab for each file, and you may be prompted for where to save each file.

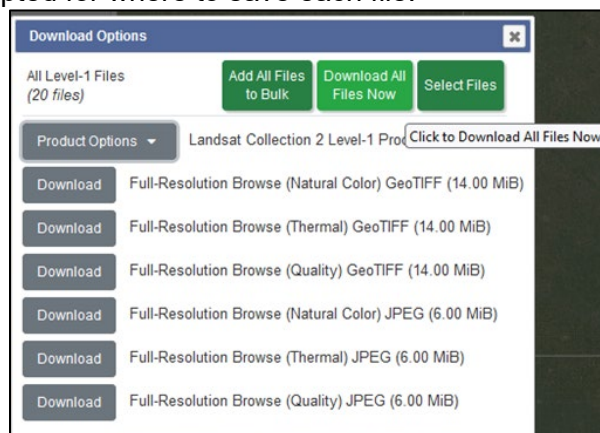


Figure 5: Download All Files Now

- **Select Files** – Click button (Figure 6) and a new window will pop up with the list of individual files (Figure 7) for the scene to toggle on or off. There is an option to customize the File Groups for each Data Set, permanently. [Data Set Customization](#) is located in the User Settings. See [User Setting Help](#) documentation for assistance.

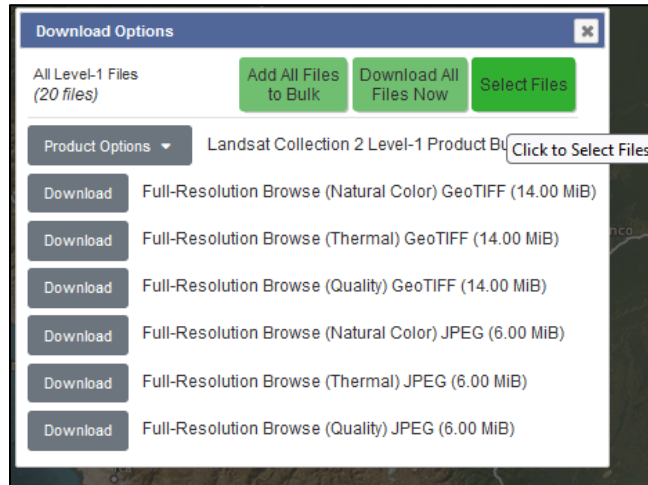


Figure 6: Select Files

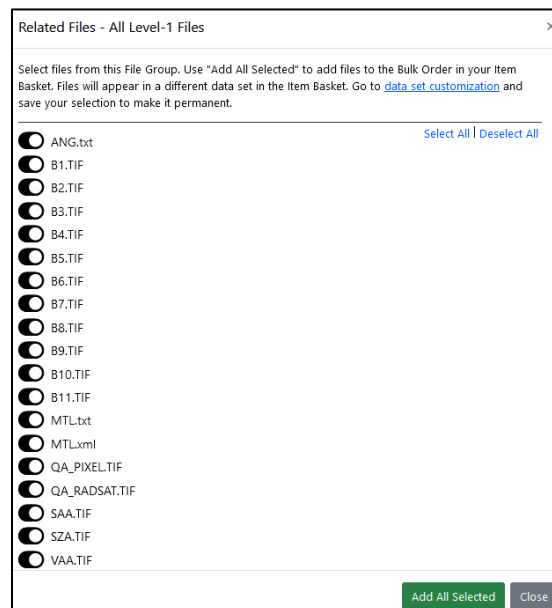


Figure 7: List of Files

Click the toggle next to the files not desired (Figure 8). Once selection is made, Click to Add to Download Bulk or Download All Selected Files. Only the files toggled “on” are downloaded or added to the Item Basket.

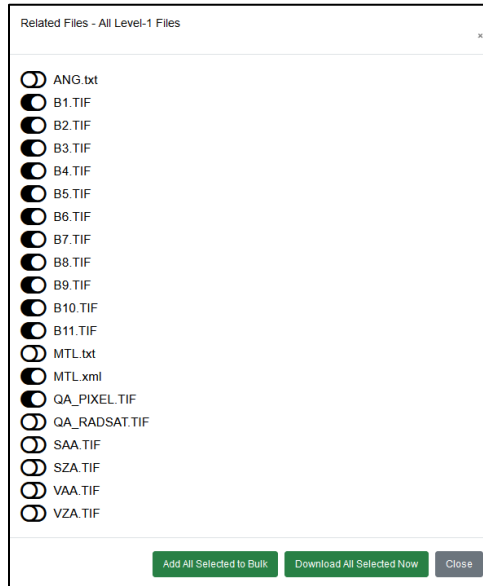


Figure 8: Toggled Scenes Off

- **Product Options** – Click on Product Options (Figure 9) and Product Download Options dialog displays (Figure 10).

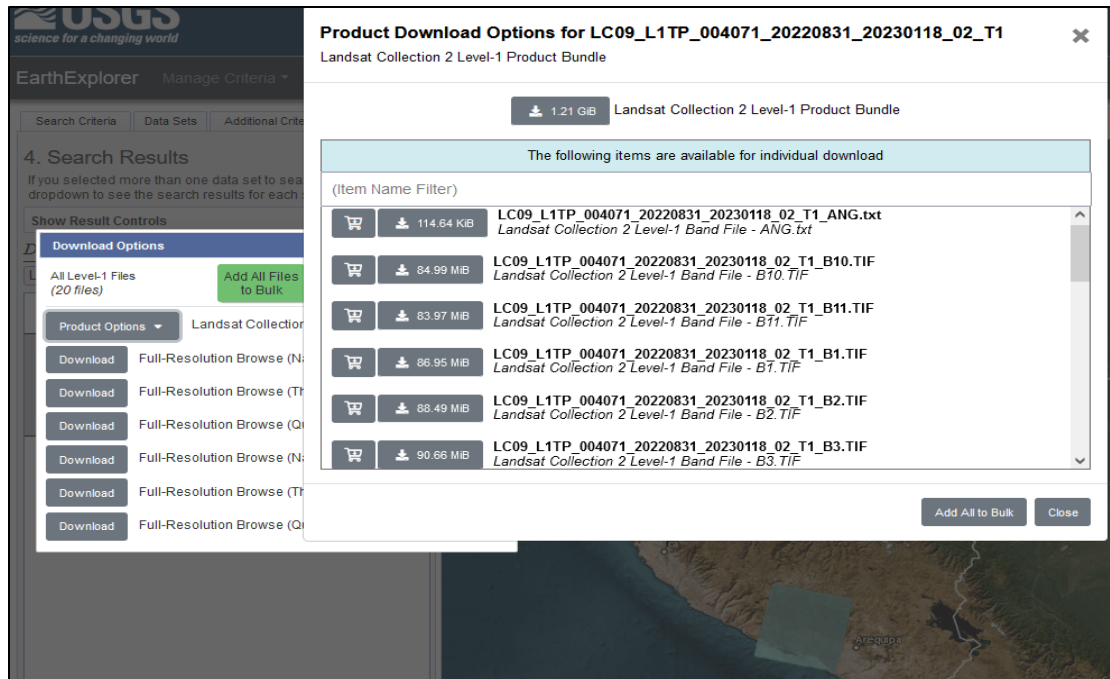


Figure 9 – Product Options

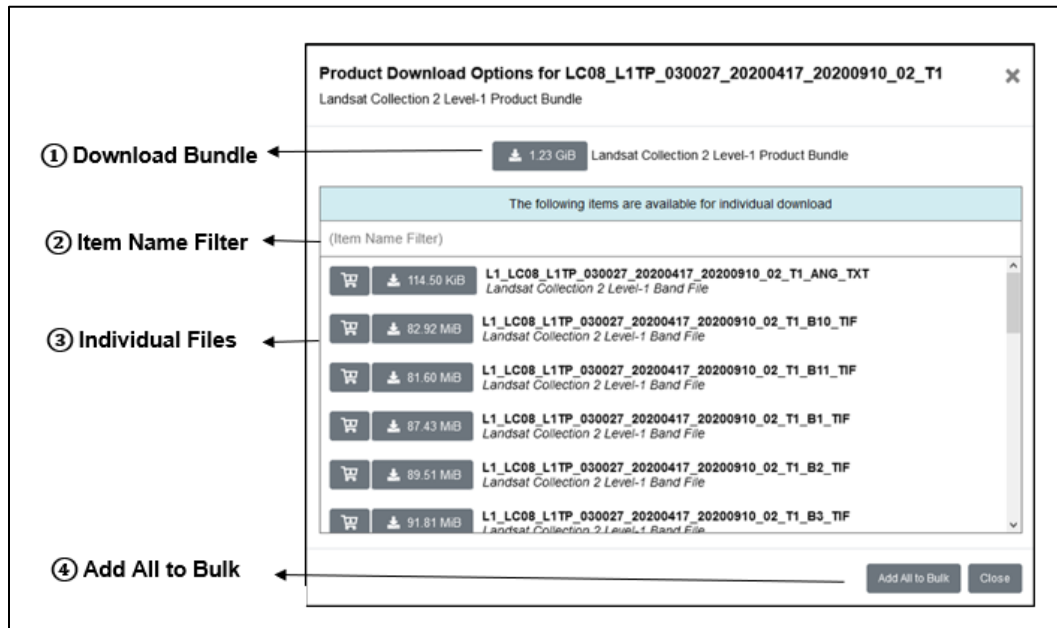
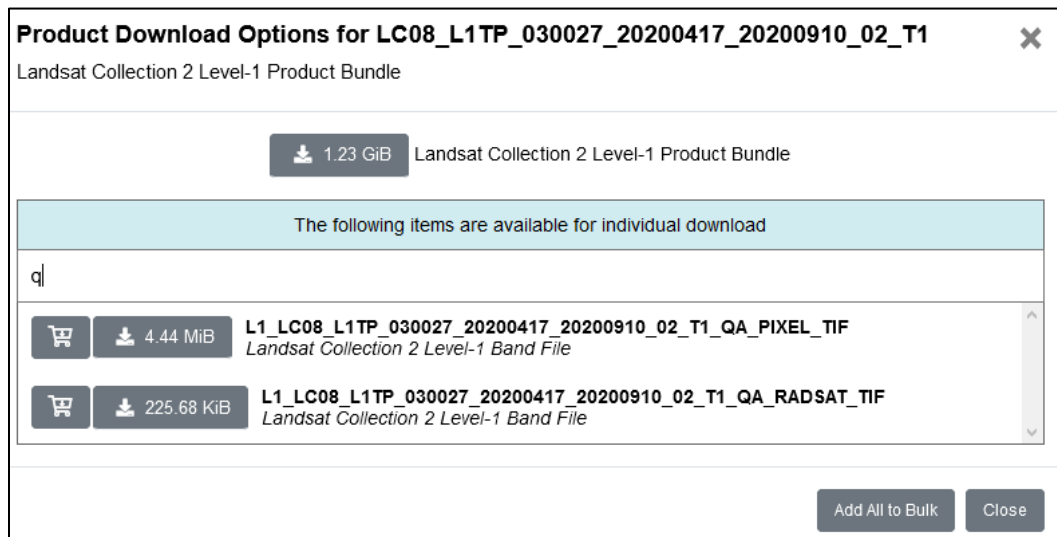


Figure 10 – Product Download Options

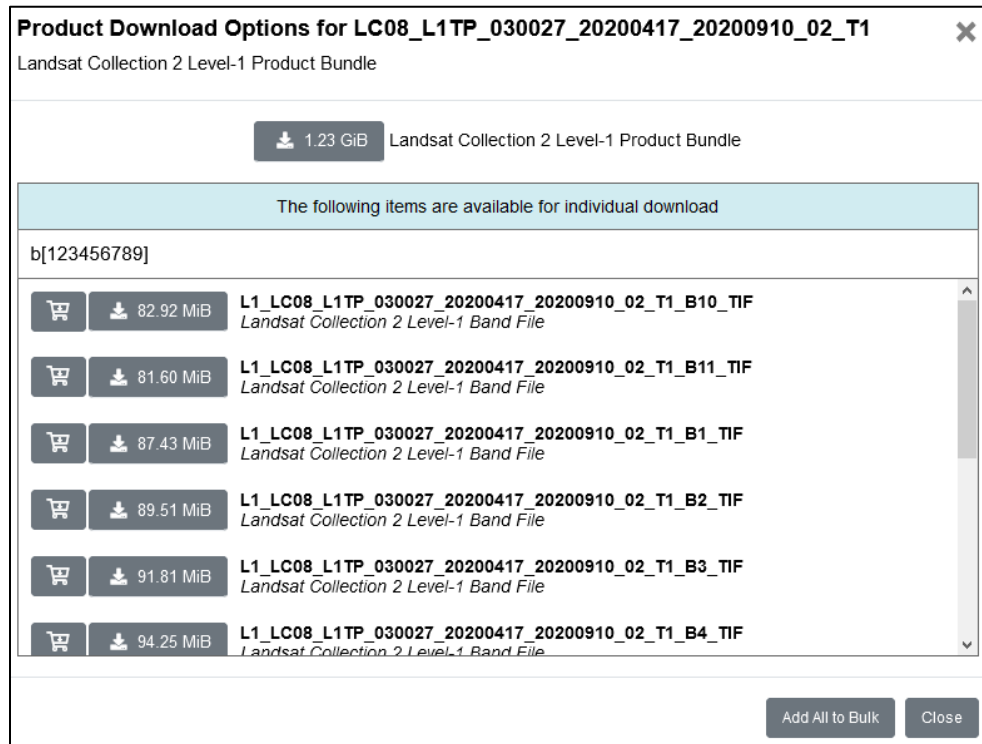
① **Download Bundle** – Click to download the Landsat Collection 2 product bundle. The file is a .tar file. The bundle download size is provided and contains all files in the product

② **Item Name Filter** – Allows user to filter for specific files.
 Example 1: Only want Quality files. Type in q. The list will only display the QA files.





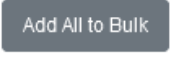

Example 1 – Filter for Quality files

Example 2: Only want Band files. Type b[123456789]. The list will only display Band files.



Example 2 – Filter for Band files

③ **Individual Files** – Click on shopping basket icon () to add desired files to Bulk Download. Or click on download icon () to download desired file.

④ **Add to Bulk** – Click on Add All to Bulk icon () to add all individual files to Bulk Download. The shopping basket icon will turn green (). After adding data to Bulk Download, close the Product Options window.

Click the “Item Basket” on the menu bar (), to display the Item Basket with a Bulk Download section. (Figure 11) Access to the Bulk Downloads is the same for all methods of downloads.

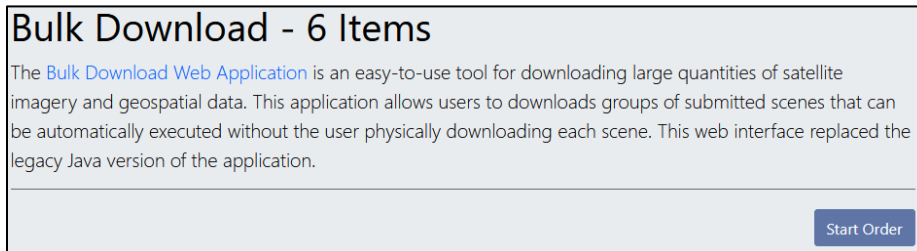
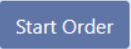


Figure 11 – Bulk Download

- **Bulk Order**

Click Start Order () to display the list of Data Sets, then expand each

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Data Set to select which products to add to your Bulk Order. For specific Landsat Collection 2 bulk order help, go to [Landsat Collection 2 Bulk Order Help](#). When products (including bundles, browse, and/or files) have been selected for each data set, use Submit Product Selections at the bottom of the section.

Access the [Bulk Download Web Application \(BDWA\)](#) to download data. See [Bulk Download Web Application \(BDWA\) Help Document](#) for further assistance.