

Open BIL, BIP or BSQ files in QGIS

QGIS Tutorials and Tips



Author

Ujaval Gandhi

<http://google.com/+UjavalGandhi>

Translations by

SongHyun Choi

BIL, BIP and BSQ files

GDAL is a library that can read and write BIL, BIP and BSQ files. The GDAL library <<http://www.gdal.org>> is used by QGIS to read and write BIL, BIP and BSQ files. QGIS can read and write BIL, BIP and BSQ files.

Band interleaved by line (BIL), band interleaved by pixel (BIP), and band sequential (BSQ) are three different ways of storing multi-band raster data. (For more information see <http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=BIL,_BIP,_and_BSQ_raster_files>)

GDAL uses the .hdr file to store metadata. The .hdr file is a text file that contains information about the raster data. The .bil, .bip, and .bsq files are binary files that contain the raster data. The .bil file is used for BIL, the .bip file is used for BIP, and the .bsq file is used for BSQ.

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Global Land Cover Facility

Global Land Cover Facility <<http://glcf.umd.edu/>> is a project of the University of Maryland, System. It provides AVHRR Global Land Cover Classification data <<http://glcf.umd.edu/data/landcover/data.shtml>>.

Global Coverage is available in BSQ format. 1 Degree pixel resolution is available.

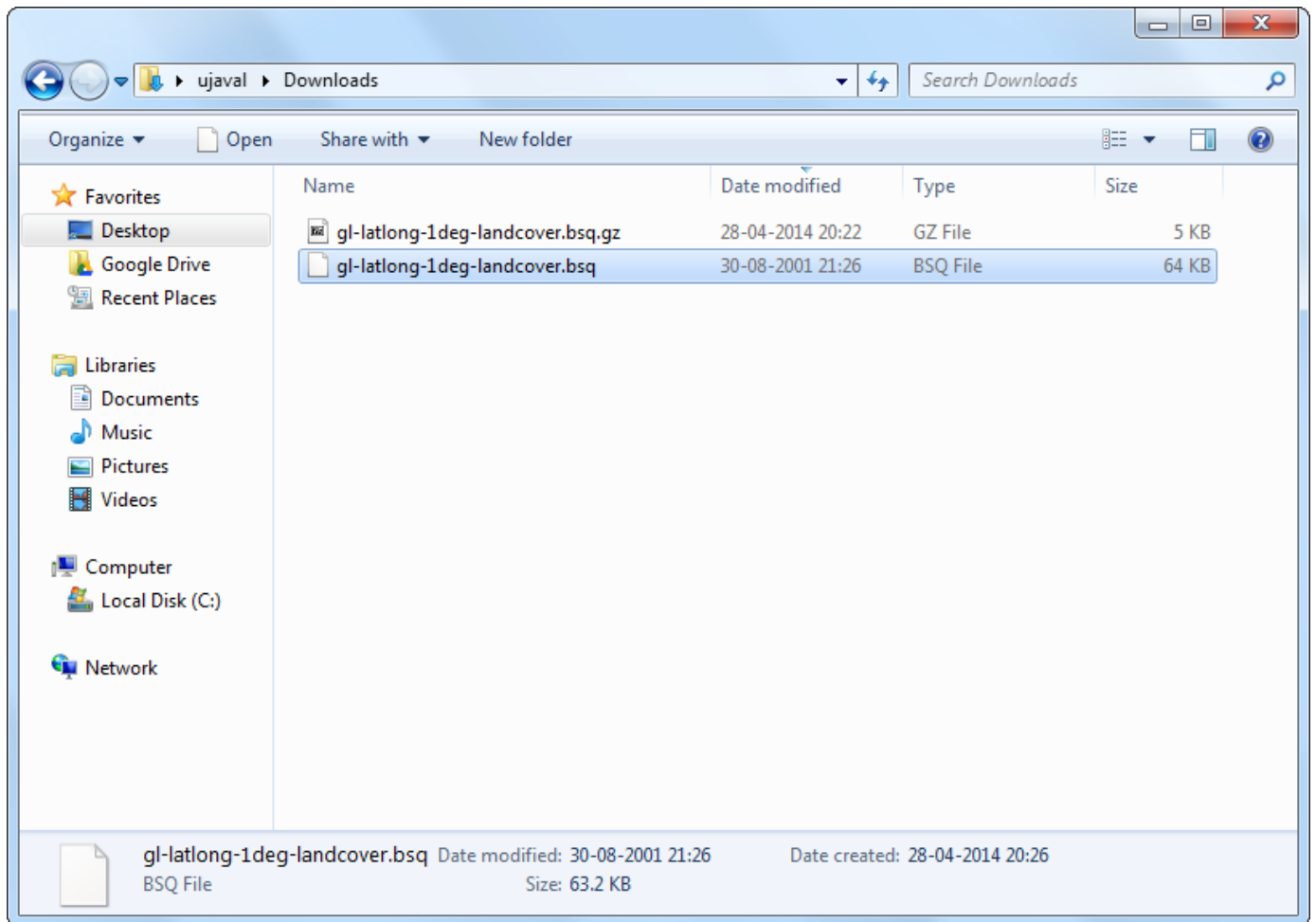
For convenience, you may directly download a copy of the dataset from the link below:

[gl-latlong-1deg-landcover.bsq.gz](#)

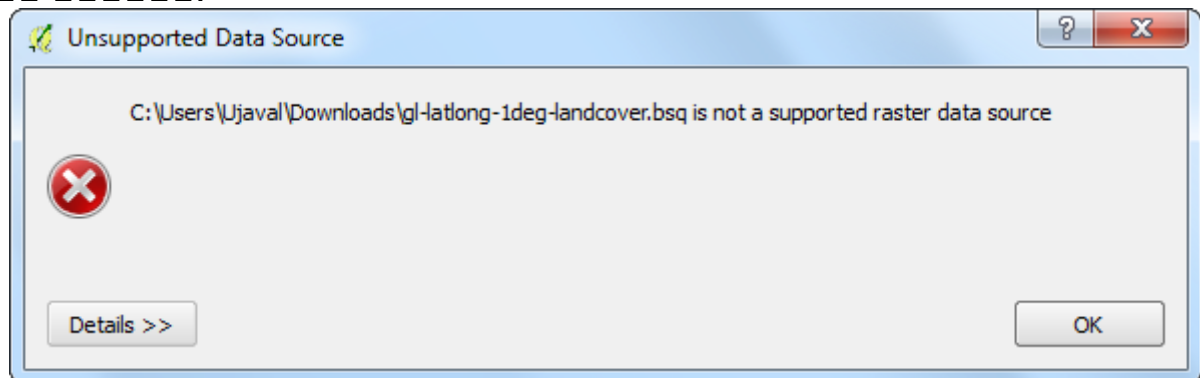
Source: [GLCF]

Steps

1. Unzip and extract the .bsq file. On Windows, you may use the excellent [7-Zip utility](#) to read and extract .gz file. You will see that you only have a .bsq file named *gl-latlong-1deg-landcover.bsq*. There is no hdr file.



2. QGIS에서 'gl-latlong-1deg-landcover.bsq' 파일을 불러오려 할 때 발생하는 오류 메시지입니다.



3. 'gl-latlong-1deg-landcover.bsq' 파일을 불러오지 못하는 이유는 'gl-latlong-1deg-landcover.bsq' 파일이 'gl-latlong-1deg-landcover.bsq.gz' 파일의 압축 해제된 형태이기 때문입니다. 'gl-latlong-1deg-landcover.bsq.gz' 파일을 'gl-latlong-1deg-landcover.bsq' 파일로 압축 해제한 후, 'gl-latlong-1deg-landcover.bsq' 파일을 QGIS에서 불러오면 됩니다. 'gl-latlong-1deg-landcover.bsq' 파일을 'gl-latlong-1deg-landcover.bsq.gz' 파일로 압축 해제하는 방법은 다음과 같습니다.

```
<ftp://ftp.glcf.umd.edu/glcf/Global_Land_Cover/Global/1deg/gl-latlong-1deg-landcover.glcf>`_l
gl-latlong-1deg-landcover.bsq.gz
gl-latlong-1deg-landcover.bsq
```



4. .hdr files are a standard format for storing raster data. Learn more about the format.

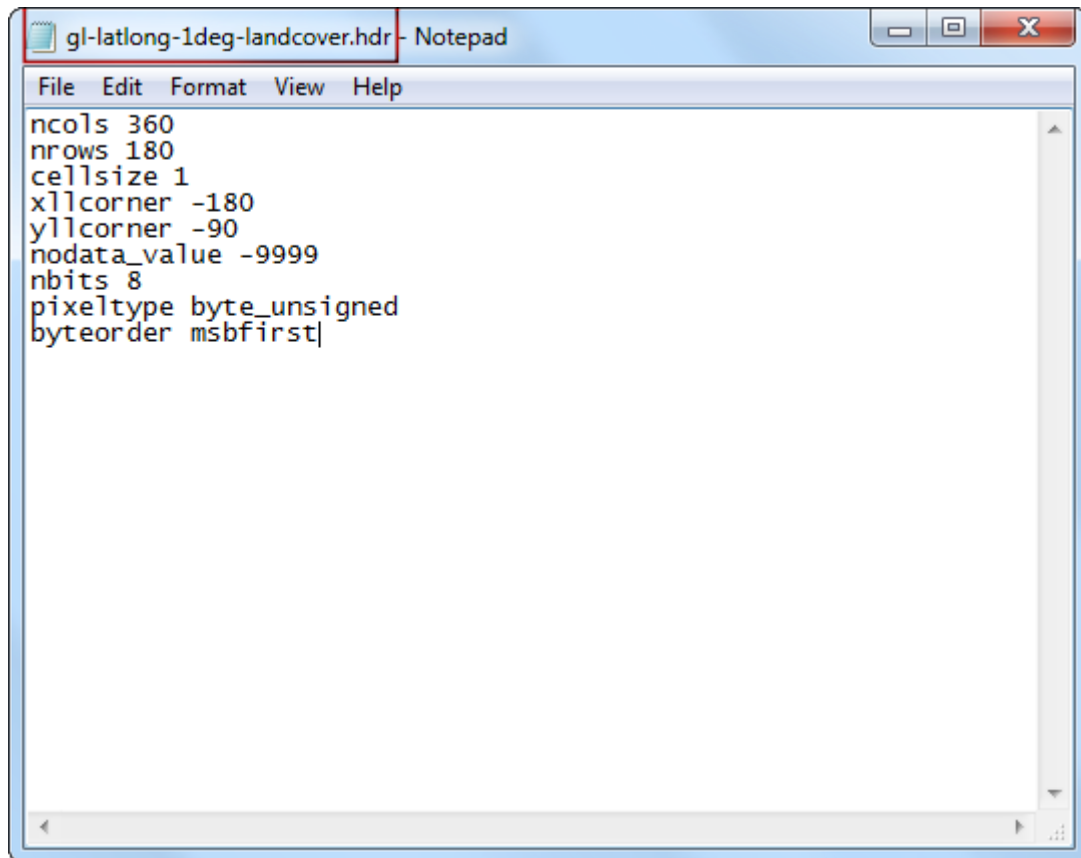
```

ncols <number of columns or width of the raster>
nrows <number of rows or height of the raster>
cellsize <pixel size or resolution>
xllcorner <X coordinate of lower-left corner of the raster>
yllcorner <Y coordinate of the lower-left corner of the raster>
nodata_value <pixel value to be ignored>
nbits <number of bits per pixel>
pixeltype <type of values stored in a pixel, typically float or integer>
byteorder <byte order in which image pixel values are stored, msb or lsb>

```

5. Open a text editor and create a file in the format specified in the previous step. Save the file as *gl-latlong-1deg-landcover.hdr*. Make sure the file doesn't have *.txt* at the end. Some of the values in the text files are easy to understand. The *ncols* and *nrows* come from the metadata as the Number of Lines and Number of Pixels per Line. The *cellsize* is 1 as the Pixel resolution from the metadata. The X,Y coordinate of lower-left corner needs to be worked out by us. Since the file

covers the entire world and units are lat/long, xllcorner and yllcorner are -180 and -90 respectively. We do not have any information about the nodata_value, so -9999 is a safe bet. From metadata again, Pixel Format is Byte, so nbits will equal to 8 and pixeltype will be byte_unsigned. We do not have information about the byteorder, so leave it as msbfirst. You may download the correctly formatted HDR file from [here](#).



6. `gl-latlong-1deg-landcover.bsq` `gl-latlong-1deg-landcover.bsq`
 QGIS --> Layer --> Add Raster
 Layer `gl-latlong-1deg-landcover.bsq`
 :guilabel: Open

