

Open BIL, BIP or BSQ files in QGIS

QGIS Tutorials and Tips



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BIL, BIP and BSQ files

GDAL supports BIL, BIP and BSQ files. The GDAL library <<http://www.gdal.org>> is used by QGIS to read and write these 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 the three main ways of storing multi-band raster data. (For more information see <[http://web help.esri.com](http://webhelp.esri.com/arcgis/info/default.asp?URL=/arcgis/info/default.asp?URL=/arcgis/info/default.asp)>)

GDAL uses the following naming convention for these files: `image.bil`, `image.bip`, `image.bsq`. The `.hdr` file is used for the header information. In QGIS, you can add a raster layer by selecting 'Layer --> Add Raster Layer' and then selecting the file.

For more information, see the GDAL documentation: <http://gdal.org/drivers/raster/bil.html>.

Global Land Cover Facility

Global Land Cover Facility <<http://glcf.umd.edu/>> provides AVHRR Global Land Cover Classification data <<http://glcf.umd.edu/data/landcover/data.shtml>>.

Global Coverage BSQ files are available. 1 Degree pixel resolution files are available.

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

[gl-latlong-1deg-landcover.bsq.gz](http://glcf.umd.edu/data/landcover/data/1deg/1deg-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.

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](#).



```
gl-latlong-1deg-landcover.hdr - Notepad
File Edit Format View Help
ncols 360
nrows 180
cellsize 1
xllcorner -180
yllcorner -90
nodata_value -9999
nbits 8
pixeltype byte_unsigned
byteorder msbfirst
```

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



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 EPSG:4326** □ □□□□□. □□ QGIS □ □□□□□ □□□□□□ □□ □□□□□□.

