

Kepler - Bug #2273

Problem with Hydro1K Flow Accumulation data

11/15/2005 08:43 AM - Dan Higgins

Status:	Resolved	Start date:	11/15/2005
Priority:	Low	Due date:	
Assignee:	Dan Higgins	% Done:	0%
Category:	actors	Estimated time:	0.00 hour
Target version:	Postpone	Spent time:	0.00 hour
Bugzilla-Id:	2273		
Description			
Hydro1K Flow Accumulation data is somehow not getting processed correctly. It should range from small numbers to numbers in the millions at the mouths of large rivers. The *.bil files look reasonable but when read and reprojected using GDAL actors, the output is a region with uniform values of 0.0! This may be related to the fact that this is the only Hydro1K data set where NBIT=32 (NBITS=16 in all the other sets.)			

History

#1 - 11/30/2005 10:09 AM - Dan Higgins

This appears to be a GDAL problem. GDAL tries to read the data in a 32 bit bil file as a 32 bit float when it is (apparently) a 32 bit INT. (Dan Higgins)

#2 - 12/01/2005 09:24 AM - Dan Higgins

This looks like a GDAL problem - see comments below from Dave Vieglaiss

Hi Dan,

from gdal-1.3.1/frmts/raw/ehdrdataset.cpp :

```
else if( EQUAL(papszTokens[0], "NBITS") )
{
    if( atoi(papszTokens[1]) == 16 )
        eDataType = GDT_Int16;
    else if( atoi(papszTokens[1]) == 32 )
        eDataType = GDT_Float32;
    else if( atoi(papszTokens[1]) == 64 )
        eDataType = GDT_Float64;
}
```

<http://www.esri.com/library/whitepapers/pdfs/eximgav.pdf> implies INT, and also indicates a variety of sizes that are not covered by GDAL (notably 1 and 4 bits not in gdal, 64 bit formats are not specified in the esri doc):

"nbits—The number of bits per pixel per band. Acceptable values are 1, 4, 8, 16, and 32. The default value is eight bits per pixel per band. For a true color image with three bands (R, G, B) stored using eight bits for each pixel in each band, nbits equals eight and nbands equals three, for a total of twenty-four bits per pixel. For an image with nbits equal to one, nbands must also equal one."

Other docs around the place indicate BIL in floating point format, or integer. Basically there is no mechanism in BIL to specify the type of data, just the size. Apart from tweaking GDAL, there doesn't seem to be any simple fix for this - you could try something like reading the data into an im memory raster, casting to INT32 as you read the pixels, then do the transform on the in memory raster. But that doesn't seem like something to do in Kepler.

I would suggest converting the files with another product to GeoTiff, which is a much more robust format.

Dave V.

Dan Higgins wrote:

Kevin,
The docs I have found for gdal_translate have an output format but I cannot find an input format. Do you have a reference or example for how to specify the input?

Dan

Kevin Ruland wrote:

Dan,

I'll look into this in the morning.

gdal_translate lets you specify input and output formats including representation.

Kevin

Dan Higgins wrote:

Hi All,

Any GIS/GDAL experts out there?

As part of the ENM/GARP workflows, we need to read and re-project some *.bil raster files. We are using some GDAL code in actors to do this. The problem is that one of the *.bil input files is specified with NBITS=32 in the *.hdr file. GDAL apparently assumes that NBITS=32 corresponds to 32-bit floating point data, but some other applications assume it is 32 bit INT data!

The data is apparently 32 bit INTs. Is *.bil data always INT data? (It allows 8 and 16 bit data which are integers; I see no way of specifying what 32 bit data represents.) Is there any way in GDAL (eg GDALWARP) to set the assumed input datatype? (i.e. tell GDAL to assume INT rather than FLOAT?)

Dan

#3 - 04/16/2006 07:30 PM - Dan Higgins

Fixing this would require changes in the gdal code. Also, the Accumulation data is apparently not considered vital. Thus, dropping plans to fix, at least in the near term.

#4 - 03/27/2013 02:19 PM - Redmine Admin

Original Bugzilla ID was 2273