QGIS Application - Bug report #20493
32 bit floating geotiff showing as black. worked in 2.18 and 3.0 - not working 3.4
2018-11-15 01:16 AM - Brad Kanther

<table>
<thead>
<tr>
<th>Status:</th>
<th>Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority:</td>
<td>High</td>
</tr>
<tr>
<td>Assignee:</td>
<td>Peter Petrik</td>
</tr>
<tr>
<td>Category:</td>
<td>Rasters</td>
</tr>
<tr>
<td>Affected QGIS version:</td>
<td>3.5(master)</td>
</tr>
<tr>
<td>Regression?:</td>
<td>Yes</td>
</tr>
<tr>
<td>Easy fix?:</td>
<td>No</td>
</tr>
<tr>
<td>Pull Request or Patch supplied:</td>
<td>No</td>
</tr>
<tr>
<td>Crashes QGIS or corrupts data:</td>
<td>No</td>
</tr>
<tr>
<td>Copied to github as #:</td>
<td>28313</td>
</tr>
</tbody>
</table>

### Description

Not sure why these type of geotiff's that were previously been read are now displaying as black and all at one elevation in QGIS 3.4. (see attached files)

[Images of geotiffs with one black and another with different elevation]

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**Information from provider**

- **Name**: GEOTIFF_32bitFloating
- **Path**: USB\Kanther\errors\0018 - geotiff_32_bit\GEOTIFF_32bitFloating.tif
- **CRS**: EPSG:26955 - ADGEO / AMG cone 55 - Projected
- **Extent**: 839355.48899999543193, 7428384.259399997736088, 842841.48889999432193, 7430046.25599
- **Units**: meters
- **Width**: 1553
- **Height**: 956
- **Data type**: Float32 - Thirty two bit floating point
- **GDAL Driver Description**: GTiff
- **GDAL Driver Metadata**: GeoTIFF
- **Dataset Description**: USB\Kanther\errors\0018 - geotiff_32_bit\GEOTIFF_32bitFloating.tif
- **Compression**: Band 1
  - STATISTICS_APPROXIMATE=YES
  - STATISTICS_MAXIMUM=228.4714081934
  - STATISTICS_MEAN=214.1108530074
  - STATISTICS_MINIMUM=153.1268405133
  - STATISTICS_STDDEV=7.816605444193
- **More information**: TIFF flags SOFTWARE=Autodesk Civil3D 2008
- **Dimensions**: X: 1553 Y: 956 Bands: 1
- **Origin**: 839355.48899999543193, 7428384.259399997736088
- **Pixel Size**: 2, 2

**Identification**

After converting in ArcGIS it works though. any ideas?

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2021-09-11
### History

**#1 - 2018-11-15 04:59 PM - Giovanni Manghi**

- Crashes QGIS or corrupts data changed from No to Yes
- Priority changed from Normal to High
- Operating System deleted (Win 7 64 bit)

Confirmed, it seems incapable to compute the mix/max values. On 2.18 is ok.

**#2 - 2018-11-21 04:14 AM - Brad Kanther**

Strange also works in 3.2; but not 3.3 onwards.

**#3 - 2018-11-21 06:58 AM - Giovanni Manghi**

- Crashes QGIS or corrupts data changed from Yes to No
- Regression? changed from No to Yes

**#4 - 2019-01-10 01:47 AM - Brad Kanther**

- File assignprojections.jpg added

A current work around to this issue is to simply use the GDAL "Assign projection" tool to read in these geotiff's and they work.

Not sure if this helps diagnose the problem with the geotiffs.
#5 - 2019-01-10 06:00 AM - Nyall Dawson
- Status changed from Open to Feedback

Works fine here -- using GDAL 2.2.4. What version of GDAL are you using?

#6 - 2019-01-10 11:34 AM - Giovanni Manghi
- Status changed from Feedback to Open
- Affected QGIS version changed from 3.4.1 to 3.4.3

Nyall Dawson wrote:

Works fine here -- using GDAL 2.2.4. What version of GDAL are you using?

I see the same as the issuer:

On Linux with 3.4.3 and GDAL 2.3.1
AND
Window with 3.4.3 and GDAL 2.4

the raster load in QGIS with min AND max value 192.59, and in the properties there no way to make QGIS compute the real min/max (as given by GDAL, for example with gdalinfo from Processing --> Minimum=193.126, Maximum=228.477, Mean=213.176, StdDev=7.677)

On Linux with 2.18.27 and GDAL 2.2.3 it all works as expected.

#7 - 2019-01-29 03:35 PM - Peter Petrik
- Assignee set to Peter Petrik
- Affected QGIS version changed from 3.4.3 to 3.5(master)

#8 - 2019-01-29 04:54 PM - Peter Petrik
with GDAL 2.2.x QgsGdalProvider::bandScale( bandNo ) = 1, but with GDAL 2.3.x, 2.4.x scale returned by GDALGetRasterScale() is 0, which effectively sets min and max to a single value and the resulting image is black.

```
gdalinfo -stats ~/GIS/bugs/20493/GEOTIFF_32floating.tif
Driver: GTiff/GeoTIFF
Files: /Users/peter/GIS/bugs/20493/GEOTIFF_32floating.tif
     /Users/peter/GIS/bugs/20493/GEOTIFF_32floating.tif.aux.xml
Size is 1553, 856
Coordinate System is:
LOCAL_CS["unnamed",
    UNIT["metre",1,
        AUTHORITY["EPSG","9001"]]
    Origin = (639355.489,7430046.260)
    Pixel Size = (2.000000000000000,-2.000000000000000)
Metadata:
    AREA_OR_POINT=Area
    TIFFTAG_SOFTWARE=Autodesk Civil3D 2008
Image Structure Metadata:
    INTERLEAVE=BAND
Corner Coordinates:
Upper Left  (  639355.489, 7430046.260)
Lower Left  (  639355.489, 7428334.260)
Upper Right (  642461.489, 7430046.260)
Lower Right (  642461.489, 7428334.260)
    Center     (  640908.489, 7429190.260)
Band 1 Block=1553x100 Type=Float32, ColorInterp=Gray
    Min=193.126 Max=228.477
    Minimum=193.126, Maximum=228.477, Mean=213.176, StdDev=7.677
    NoData Value=3.4028234663852886e+38
    Offset: 192.59, Scale:0
Metadata:
    STATISTICS_MAXIMUM=228.4774017334
    STATISTICS_MEAN=213.17601565667
    STATISTICS_MINIMUM=193.12649536133
    STATISTICS_STDDEV=7.6765733315397
```

#9 - 2019-01-29 04:54 PM - Peter Petrik
- Status changed from Open to In Progress
- Assignee set to Peter Petrik

#10 - 2019-01-30 09:37 AM - Even Rouault

GDAL upstream fixed push in GDAL master per [https://github.com/OSGeo/gdal/commit/e261b7f4fa15e7627f3a73f3d9c965181d991](https://github.com/OSGeo/gdal/commit/e261b7f4fa15e7627f3a73f3d9c965181d991) and release/2.4 (for 2.4.1) per [https://github.com/OSGeo/gdal/commit/0a3d241f96e83b86073ecf6c956b51376c7056e4f](https://github.com/OSGeo/gdal/commit/0a3d241f96e83b86073ecf6c956b51376c7056e4f)

A reasonable QGIS workaround is to check GDALGetRasterScale() != 0, since == 0 doesn't make much sense.

#11 - 2019-02-01 03:47 PM - Peter Petrik
- Status changed from In Progress to Closed

https://github.com/qgis/QGIS/pull/9035

#12 - 2019-02-01 03:49 PM - Peter Petrik

also backported https://github.com/qgis/QGIS/pull/9056

Files

<table>
<thead>
<tr>
<th>File Name</th>
<th>Size</th>
<th>Date</th>
<th>Author</th>
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<td>geotiffproblems-02.jpg</td>
<td>57.8 KB</td>
<td>2018-11-15</td>
<td>Brad Kanther</td>
</tr>
<tr>
<td>geotiffproblems-01.jpg</td>
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<td>GEOTIFF_32floating.zip</td>
<td>2.82 MB</td>
<td>2018-11-15</td>
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<tr>
<td>assignprojections.jpg</td>
<td>59.8 KB</td>
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