

## QGIS Application - Bug report #14702

### GPX-Export: Wrong coordinates and altitude values (QGIS 2.14.1 Linux)

2016-04-18 11:00 PM - Flo Ju

<b>Status:</b> Closed	
<b>Priority:</b> Severe/Regression	
<b>Assignee:</b>	
<b>Category:</b> Vectors	
<b>Affected QGIS version:</b> 2.14.1	<b>Regression?:</b> No
<b>Operating System:</b> Linux Kubuntu and Windows	<b>Easy fix?:</b> No
<b>Pull Request or Patch supplied:</b>	<b>Resolution:</b>
<b>Crashes QGIS or corrupts data:</b>	<b>Copied to github as #:</b> 22663
<b>Description</b>	
<p>QGIS 2.14 seems to have an error exporting Features (3D) to GPX. Doing the same with the same data in QGIS 2.8.x the GPX-Files are valid.</p> <p>What happens: In QGIS 2.14 in the altitude values become centimeters instead of meters in the exported GPX. (Screenshot lower right window)</p> <p>Workflow: Shapefile with line-features (3D with z values) in Austria GK West (epsg:31254) --&gt; select a feature --&gt; Save as... --&gt; GPX without attributes with target CRS epsg:4326. Coordinates are OK, altutude-values become centimeters. Same workflow in QGIS 2.8.x --&gt; everything OK (Screenshot left window).</p> <p>Workflow 2: Transform the Shapefile to epsg:4326 before export --&gt; same behaviour.</p> <p>Workflow 3: Setting no target CRS at export to GPX (user defined -10000) --&gt; altitude values in meters ! but coordinates not decimal degrees.</p> <p>In QGIS 2.8 the normal workflow and also variant workflow 1 work well and generate valid GPX-files.</p>	

#### Associated revisions

##### Revision af2993e9 - 2016-06-27 12:08 PM - Even Rouault

QgsCoordinateTransform::transformCoords(): do not convert elevations to radians

Fixes #14702

##### Revision 0de1bfaf - 2016-06-28 12:46 PM - Even Rouault

QgsCoordinateTransform::transformCoords(): do not convert elevations to radians

Fixes #14702

##### Revision 17295317 - 2016-06-29 11:38 PM - Nyal Dawson

Don't transform z coordinates by default

Since z coordinates can represent potentially any height unit and reference point, it's not safe to assume that they always represent height in metres relative to the ellipsoid.

Instead, leave z values untouched by default with geometry transforms, and make transforming z an optional parameter

## History

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### #1 - 2016-06-26 09:02 PM - Nyal Dawson

- Resolution set to up/downstream
- Status changed from Open to Closed

I believe this is a change/bug in GDAL itself - trying to convert a shapefile with Z to GPX using ogr2ogr also results in the incorrectly converted altitude values.

### #2 - 2016-06-27 03:00 AM - Even Rouault

- Resolution deleted (up/downstream)
- Status changed from Closed to Reopened

I'm not sure this is a bug in the OGR GPX driver. I couldn't reproduce on ogr2ogr command line any issue, but with QGIS yes. So I suspect there's an issue with how QGIS reprojects coordinates.

```
$ cat linestring25d.csv
id,WKT
1,"LINESTRING(2 49 100,3 50 200)"

$ ogr2ogr linestring25d_4326.shp linestring25d.csv -a_srs EPSG:4326 -select id

$ ogr2ogr linestring25d_32631.shp linestring25d.csv -s_srs EPSG:4326 -t_srs EPSG:32631 -select id

$ ogr2ogr -f GPX linestring25d_from_4326.gpx linestring25d_4326.shp

$ cat linestring25d_from_4326.gpx
<?xml version="1.0"?>
<gpx version="1.1" creator="GDAL 2.2.0dev" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.topografix.com/GPX/1/1" xsi:schemaLocation="http://www.topografix.com/GPX/1/1
http://www.topografix.com/GPX/1/1/gpx.xsd">
<metadata><bounds minlat="49.000000000000000" minlon="2.000000000000000" maxlat="50.000000000000000"
maxlon="3.000000000000000"/></metadata>
<rte>
<rtept lat="49.0" lon="2.0">
<ele>100.0</ele>
</rtept>
<rtept lat="50.0" lon="3.0">
<ele>200.0</ele>
</rtept>
</rte>
</gpx>

$ ogr2ogr -f GPX linestring25d_from_32631.gpx linestring25d_32631.shp -t_srs EPSG:4326

$ cat linestring25d_from_32631.gpx
<?xml version="1.0"?>
<gpx version="1.1" creator="GDAL 2.2.0dev" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
```

```

xmlns="http://www.topografix.com/GPX/1/1" xsi:schemaLocation="http://www.topografix.com/GPX/1/1
http://www.topografix.com/GPX/1/1/gpx.xsd">
<metadata><bounds minlat="48.99999999999893" minlon="1.99999999999914" maxlat="49.9999999999993"
maxlon="3.00000000000000"/></metadata>
<rte>
<rtept lat="48.99999999999893" lon="2.0">
<ele>100.0</ele>
</rtept>
<rtept lat="50.0" lon="3.0">
<ele>200.0</ele>
</rtept>
</rte>
</gpx>

```

If I open linestring25d\_4326.shp with QGIS (master) and save it as GPX, the GPX is fine. If I open linestring25d\_32631.shp with QGIS and save it as GPX, making sure to force the target SRS to EPSG:4326, then the elevations are corrupted :

```

$ cat test.gpx
<?xml version="1.0"?>
<gpx version="1.1" creator="GDAL 2.2.0dev" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:ogr="http://osgeo.org/gdal"
xmlns="http://www.topografix.com/GPX/1/1" xsi:schemaLocation="http://www.topografix.com/GPX/1/1
http://www.topografix.com/GPX/1/1/gpx.xsd">
<metadata><bounds minlat="48.99999999999901" minlon="1.99999999999915" maxlat="50.00000000000007"
maxlon="3.00000000000000"/></metadata>
<rte>
<extensions>
<ogr:id>1</ogr:id>
</extensions>
<rtept lat="49.0" lon="2.0">
<ele>5729.577951308232514</ele>
</rtept>
<rtept lat="50.0" lon="3.0">
<ele>11459.155902616465028</ele>
</rtept>
</rte>
</gpx>

```

### #3 - 2016-06-27 03:10 AM - Even Rouault

I've submitted <https://github.com/qgis/QGIS/pull/3244> which fixes my above case for linestring25d\_32631.shp export from QGIS. Looks to me like the issue would have always existed ! (since the commit that introduces it is from 2006!)

### #4 - 2016-06-28 03:45 AM - Even Rouault

- Status changed from Reopened to Closed

Fixed in changeset commit:"af2993e97b5a4ab98107bdce86780d11dca91109".

**Files**

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QGIS214\_GPX.png

162 KB

2016-04-18

Flo Ju