

QGIS Application - Bug report #719

Problem with NTF projection in ECW files

2007-05-24 03:04 AM - jrepetto -

Status:	Closed	
Priority:	Low	
Assignee:	nobody -	
Category:	Projection Support	
Affected QGIS version:		Regression?: No
Operating System:	Gentoo	Easy fix?: No
Pull Request or Patch supplied:		Resolution: fixed
Crashes QGIS or corrupts data:		Copied to github as #: 10778
Description		
I want to use Qgis to display ECW files (french maps), such as : <http://www.aix-mrs.iufm.fr/formations/filieres/hge/gd/gdticehg/crigepaca/donneesmartigues/scan25000martigues.ecw> The projection recorded in the ECW file header is LM2FRANC, it corresponds to NTF Lambert II (QGIS SRSID: 1605, [[PostGIS]] SRID: 27572). When I open the file in Qgis 0.8, an error message is displayed on the console : [[QgsSpatialRefSys]]::createFromProj4 error proj string supplied has no +ellps argument and if I check the properties of the layer, the SRS is "+proj=longlat +ellps=WGS84 +datum=WGS84 +no_defs". I have to manually change the projection. gdalinfo gives the right projection : <pre>\$ gdalinfo scan25000martigues.ecw Driver: ECW/ERMapper Compressed Wavelets Size is 1353, 1153 Coordinate System is: PROJCS["unnamed", GEOGCS["N.T.F.", DATUM["NTF", SPHEROID[[CLA80IGN]], PRIMEM[[Greenwich]], UNIT[[degree]], PROJECTION[[Lambert_Conformal_Conic_2SP]], PARAMETER[[standard_parallel_1]], PARAMETER[[standard_parallel_2]], PARAMETER[[latitude_of_origin]], PARAMETER[[central_meridian]], PARAMETER[[false_easting]], PARAMETER[[false_northing]], UNIT[[Meter]]] Origin = (818273.0000000000000000,1827901.0000000000000000) Pixel Size = (2.500000000000000,-2.500000000000000) Corner Coordinates: Upper Left (818273.000, 1827901.000) (5d 1'43.15"E, 43d25'10.72"N) Lower Left (818273.000, 1825018.500) (5d 1'38.78"E, 43d23'37.52"N) Upper Right (821655.500, 1827901.000) (5d 4'13.18"E, 43d25'6.94"N) Lower Right (821655.500, 1825018.500) (5d 4'8.74"E, 43d23'33.75"N)</pre>		

Center (819964.250, 1826459.750) (5d 2'55.96"E, 43d24'22.24"N)
Band 1 Block=1353x1 Type=Byte, [[ColorInterp]]=Red Overviews: arbitrary
Band 2 Block=1353x1 Type=Byte, [[ColorInterp]]=Green Overviews: arbitrary
Band 3 Block=1353x1 Type=Byte, [[ColorInterp]]=Blue Overviews: arbitrary

I am using Qgis 0.8, gdal-1.4.1, libecwj2-3.3 and proj-4.5.0 on a Gentoo Linux system.

History

#1 - 2007-05-24 12:48 PM - jrepetto -

The missing string in the projection parameters is : +ellps=clark80

But the projection parameters in Qgis 0.8.0 have another problem (see ticket #598). Either lon_0 should be non null, either the primer meridian should be set to Paris, but not both.

#2 - 2007-11-29 03:23 AM - jrepetto -

As the milestone for this bug resolution is postponed to the next release whenever there is a new GIS release, I have decided to solve it myself, because it is very boring to have to set manually the projection parameters each time you open a file.

The error message is generated by the function `[[QgsSpatialRefSys]]::createFromProj4` in the file `qgsspatialrefsys.cpp` :

```
QRegExp myEllipseRegExp( "\\+ellps=\\S+" );
myStart= 0;
myLength=0;
myStart = myEllipseRegExp.search(theProj4String, myStart);
if (myStart== -1)
{
    [[QgsLogger]]::warning("QgsSpatialRefSys::createFromProj4 error proj string supplied has no +ellps argument");

    return mIsValidFlag;
}
else
{
    myLength = myEllipseRegExp.matchedLength();
}
```

According to the PROJ.4 documentation (available at <http://ftp.remotesensing.org/proj/OF90-284.pdf>), the +ellps parameter is not mandatory (see page 9, paragraph "Specifying the Earth's Figure").

The "+ellps" parameter is only a convenient method of specifying standard ellisoidal constants.

The standard way is to use two constants (only one for a sphere) :

The first and required value +a=a where a is the semimajor axis of the ellipse or equitorial radius.

The second parameter can be in any one of the following standard forms:

- semiminor axis or polar radius +b=b,
- flattening +f=f ,
- reciprocal flattening, +rf=1/f ,
- eccentricity +e=e, or
- eccentricity squared +es=e2 .

In the case reported upper, the PROJ4 string is :

```
+proj=lcc +lat_1=46.8 +lat_0=46.8 +lon_0=2.3372291666666664 +k_0=0.99987742 +x_0=600000 +y_0=2200000 +a=6378249.2
+b=6356515.000000472 +units=m +no_defs
```

It uses the standard form to specify the ellipsoid, so QGIS should accept it.

#3 - 2007-11-29 03:58 AM - jrepetto -

Simple patch proposal : remove the obligation for the +ellps parameter.

```
diff -ur qgis_0.9.0.orig/src/core/qgsspatialrefsys.cpp qgis_0.9.0/src/core/qgsspatialrefsys.cpp
--- qgis_0.9.0.orig/src/core/qgsspatialrefsys.cpp    2007-09-16 04:45:42.000000000 +0200
+++ qgis_0.9.0/src/core/qgsspatialrefsys.cpp    2007-11-29 12:48:01.000000000 +0100
@@ -514,17 +514,11 @@
     myStart= 0;
     myLength=0;
     myStart = myEllipseRegExp.search(theProj4String, myStart);
-   if (myStart==-1)
-   {
-       [[QgsLogger]]::warning("QgsSpatialRefSys::createFromProj4 error proj string supplied has no +ellps argument");
-
-       return mIsValidFlag;
-   }
-   else
+   if (myStart!=-1)
    {
        myLength = myEllipseRegExp.matchedLength();
+       mEllipsoidAcronym = theProj4String.mid(myStart+ELLPS_PREFIX_LEN,myLength-ELLPS_PREFIX_LEN);
    }
-   mEllipsoidAcronym = theProj4String.mid(myStart+ELLPS_PREFIX_LEN,myLength-ELLPS_PREFIX_LEN);
-   //mproj4string must be set here for the rest of this method to behave in a meaningful way...
-   mProj4String = theProj4String;
```

#4 - 2007-11-29 04:32 AM - jrepetto -

Second patch proposal : checks that the proj4 string contain either the +ellps parameter, either the +a parameter :

```
diff -ur qgis_0.9.0.orig/src/core/qgsspatialrefsys.cpp qgis_0.9.0/src/core/qgsspatialrefsys.cpp
--- qgis_0.9.0.orig/src/core/qgsspatialrefsys.cpp    2007-09-16 04:45:42.000000000 +0200
+++ qgis_0.9.0/src/core/qgsspatialrefsys.cpp    2007-11-29 13:03:28.000000000 +0100
@@ -488,10 +488,13 @@
 {
     //
-   // Example:
+   // Examples:
+   // +proj=tmerc +lat_0=0 +lon_0=-62 +k=0.999500 +x_0=400000 +y_0=0
```

```

// +ellps=clrk80 +towgs84=-255,-15,71,0,0,0,0 +units=m +no_defs
//
+ // +proj=lcc +lat_1=46.8 +lat_0=46.8 +lon_0=2.337229166666664 +k_0=0.99987742
+ // +x_0=600000 +y_0=2200000 +a=6378249.2 +b=6356515.000000472 +units=m +no_defs
+ //
mIsValidFlag=false;

QRegExp myProjRegExp( "\\++proj=\\S+" );
@@ -514,17 +517,22 @@
myStart= 0;
myLength=0;
myStart = myEllipseRegExp.search(theProj4String, myStart);
- if (myStart==-1)
+ if (myStart!=-1)
{
- [[QgsLogger]]::warning("QgsSpatialRefSys::createFromProj4 error proj string supplied has no +ellps argument");
-
- return mIsValidFlag;
+ myLength = myEllipseRegExp.matchedLength();
+ mEllipsoidAcronym = theProj4String.mid(myStart+ELLPS_PREFIX_LEN,myLength-ELLPS_PREFIX_LEN);
}
- else
+
+ QRegExp myAxisRegExp( "\\++a=\\S+" );
+ myStart= 0;
+ myLength=0;
+ myStart = myAxisRegExp.search(theProj4String, myStart);
+ if (myStart==-1 && mEllipsoidAcronym.isNull())
{
- myLength = myEllipseRegExp.matchedLength();
+ [[QgsLogger]]::warning("QgsSpatialRefSys::createFromProj4 error proj string supplied has no +ellps or +a argument");
+
+ return mIsValidFlag;
}
- mEllipsoidAcronym = theProj4String.mid(myStart+ELLPS_PREFIX_LEN,myLength-ELLPS_PREFIX_LEN);
//mproj4string must be set here for the rest of this method to behave in a meaningful way...
mProj4String = theProj4String;

```

#5 - 2007-11-29 04:36 AM - jrepetto -

Note :

With one of the above patches applied, and when there is no +ellps argument, new warnings appear :

```

Warning: [[QgsSpatialRefSys]]::getRecord failed : select * from tbl_srs where parameters='+proj=lcc +lat_1=46.8 +lat_0=46.8
+lon_0=2.337229166666664 +k_0=0.99987742 +x_0=600000 +y_0=2200000 +a=6378249.2 +b=6356515.000000472 +units=m +no_defs'
Warning: [[QgsSpatialRefSys]]::findMatchingProj will only work if prj acr ellipsoid acr and proj4string are set!...
Warning: [[QgsSpatialRefSys]]::getRecord failed : select * from tbl_srs where parameters='+proj=lcc +lat_1=46.8 +lat_0=46.8
+lon_0=2.337229166666664 +k_0=0.99987742 +x_0=600000 +y_0=2200000 +a=6378249.2 +b=6356515.000000472 +units=m +no_defs'
Warning: [[QgsSpatialRefSys]]::findMatchingProj will only work if prj acr ellipsoid acr and proj4string are set!...

```

I don't think it is a problem, the map is correctly displayed and referenced.

#6 - 2007-11-30 05:00 AM - Tim Sutton

- *Status changed from Open to Closed*
- *Resolution set to fixed*

Hi

I have applied your patch to SVN trunk as r

Please note for future patch submissions please attach them to the ticket as bug7689fix.diff as described in [2.6. Submitting Patches](#).

Many thanks for your contribution! I am adding you to our bug triage page for fame & glory :-)

Regards

Tim

#7 - 2009-08-22 12:52 AM - Anonymous

Milestone Version 0.9.1 deleted