

# Different file types and different Coordinate reference system CRS

QGIS 2.4 - WINDOWS 7 - AUGUST 2014

### Goal for this lesson:

In this lesson you will learn to use vector data with different projection /coordinate reference system CRS. How to change the CRS 'on the fly'.

How to open data from a Comma separated value (CSV) - Save as Shape and Save as GPX.

Data can be generated, used and saved in different programs. Spreadsheet, texteditor and GPS are a few examples. In this lesson you are going to open CSV data from a spreadsheet, containing both coordinates and attribute data. The data has to be edited for later use in a GPS using GPX file.

Warning: This lesson can be a bit complicated to understand. 'Why saving in so many different file types' is a common question. That is because Shapefile is the only file in which you can edit data.

The steps are:

- Open Raster with CRS 25832
- Open CSV with CRS 4326
- Save as GPX
- Save as Shape •
- Update and delete columns .
- Save as GPX •

#### Data: Tree.Zip Source: Skærmkort from Kortforsyningen.dk



### Start lesson

### Set 'On the fly reprojection'

It is important to have the initial **Settings** right before you start working on the data. Click Setting>Otions>CRS

for the right projection



If you have to make changes in this dialog - please restart the program.

#### For these lessons we use CRS for Denmark UTM 32 N – ETRS89 – If your data is from another place check

8	×
n if layers have different CRS	
Select	
s loaded that has no CRS	
Select	
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um ti Destination datum transform	
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OK Cancel Help	

## **Control Project CRS**

In this lesson we use 2 different projections for the data files: EPSG 25832 for UTM 32 N - ETRS 89 and EPSG 4326 for Long/Lat – WGS 84

Very important is to keep the project in only one projection: EPSG 25832

In the right bottom corner see if EPSG is 25832 for UTM 32 ETRS 89

anced int	erface				$\bigcirc$	-
Scale	1:11	•	×	Render	EPSG:25832	

#### And click Project>Project properties>CRS

#### See in Selected CRS.

If it is not correct write in Filter 25832 and choose on the list.

🧭 Project Properties   C	RS	? 💌
🔀 General	■ Enable 'on the fly' CRS transformation	
CRS	Filte	
Tdantifi Jawana	Recently used coordinate reference systems	
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	ОК	Cancel Apply Help

Save the project Click **Project> Save** 

### Open background image

Open raster file Click Layer>Add raster layer Choose Backgroundimage.tif

Choose EPSG 25832

Click OK

## Open CVS (Comma Seperated Value) file

Click on Layer>Add Delimited Text Layer Browse for Sample\_coordinates.csv Click Open

Number is a sample number, x and y are coordinates for the sample. The coordinates are in Lon/Lat WGS 84

🙋 Create a Laye	er from a Delimited Text F	ile			-?
File Name C:/Us	ers/dlt265/Desktop/Lesson7/S	Sample_coord	linates.csv		Browse
Layer name Sam	nple_coordinates			Encoding UTF-8	
File format	CSV (comma separate	d values)	O Custom delimiters	Regular expression de	elimiter
Record options Field options Geometry definitio	Number of header lines to Trim fields Discar Point coordinates	discard 0 d empty field	<ul> <li>First record has fie</li> <li>Decimal separator is</li> <li>Well known text (WKI</li> </ul>	eld names comma F) O No geometry (attribut	e only table)
	X field X	▼ Y	field Y	▼ DMS coordinates	
Layer settings	Use spatial index		Use subset index	Watch file	
Number	Y X				{
1 405 5	5.3539333 10.5091667				
2 406 5	5.3514167 10.4970500				
- 407 E	E 4000222 10 6714E00				l
				OK Cancel	Help

Click OK

Choose WGS 84 EPSG 4326

#### Click OK

If you don't get the points over the background you have done something wrong... Then close the file and try open again.

Open the Attribute table and see the data. There are 3 columns.

### Save as GPX

The data has to be used in a GPS which uses the file format GPX. The GPX file needs some specific columns - and the easiest way to get these is to Save as

#### In Layers Rightclick on Sample coordinates Choose Save A

Choose Save As	Save vector laver as	2
Change Format to GPX	Format GPS eXchange Format [GPX]	
Click on <b>Browse</b> write a file- name	Save as C:/Users/dlt265/Desktop/Less	on7/CSV_GPX.gpx Browse
Check CRS is WGS84	CRS Layer CRS	Browse
Mark <b>x</b> Add saved file to map		
Click <b>OK</b>	Save only selected features Skip attribute creation	System
	Symbology export	No symbology
	Scale	1:50000
	Extent (current: layer)	
	Datasource Options	
	Layer Options     FORCE_GPX_ROUTE NO     FORCE_GPX_TRACK NO	 ▼ ▼
	Custom Options	

### Save As Shape

The data for Number - now OGR\_Number has to be copied into the column Name. But the GPX file is a read-only file. You can't edit the file, so now you have to make another Save as into a Shape file.

Right click on Waypoints <ul> <li>Save as</li> </ul>	🐔 Save vector layer as 🔋 💽		
Choose ESRI Shapefile	Format ESRI Shapefile	•	
Click on Browse write GPX_SHP	Save as C:/Users/dlt265/Desktop/Les	sson7(GPX_SHP.gpx.shp Browse	
Check CRS is WGS84	CRS Layer CRS	•	
X Add saved file to map	WGS 84	Browse	
Click OK	Encoding Save only selected features	System 💌	
Close Waypoints	Add saved file to map		
	Symbology export	No symbology	
	Scale	1:50000	
	Extent (current: layer)		
	Datasource Options		
	Layer Options		
	Custom Options		
		OK Cancel Help	

A GPX file can contain 5 different datatypes in one file – so you have to choose Waypoints> Click OK.

In Layers you will see the layer as **Waypoint** but the filename is CSV\_GPX.gpx - Confusing ..... If you later are going to work with several waypointlayer - rename the layer

4	💈 Select	vector layers to	o add		? ×
	Layer ID	Layer name	Number of features	Geometry type	
	0 1 2 3 4	waypoints routes tracks route_points track_points	Unknown Unknown Unknown Unknown Unknown	Point LineString MultiLineString Point Point	
				OK Select All	Cancel

#### Close Sample\_coordinates

Open the attribute table and see all the new data. Check where the original data for **Number** now is located.

### Update and delete coloumns

In Layers click on GPX\_SHP Open Attribute table



You are going to update the **name** column with the data from the **ogr\_Number column** 

In the first dropdown change ele to name In the text box write **ogr\_Number** Click on Update All

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Next you are going to delete all 3 ogr\_ columns

Click on Delete columns

Choose and click **OK** 

🧭 Delete Attributes		? 🗙
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hdop		
vdop		
pdop		
ageofdgpsd		
dgpsid		 
ogr_Number		P P P
ogr_Y		
ogr_X		•
	ОК	Cancel

Save As GPX – again Now data has to be saved for the GPS

In Layers Rightclick on GPX\_SHP Choose Save As

Change Format to GPX

Click on **Browse** write Sample\_GPX

Check CRS is WGS84

Click OK

Data can now be transferred to a GPS.