FACULTY OF SCIENCE
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Different file types and different Coordinate reference system CRS

QGIS 2.4 - WINDOWS 7 - AUGUST 2014

Goal for this lesson:

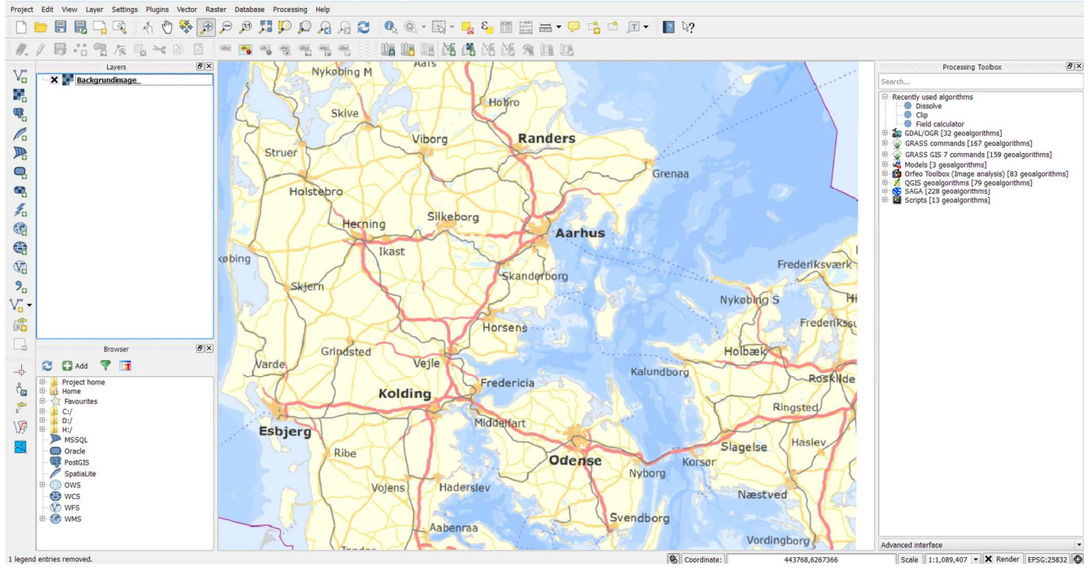
In this lesson you will learn to use vector data with different projection /coordinate reference system CRS.
How to change the CRS 'on the fly'.
How to open data from a Comma separated value (CSV) – Save as Shape and Save as GPX.

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

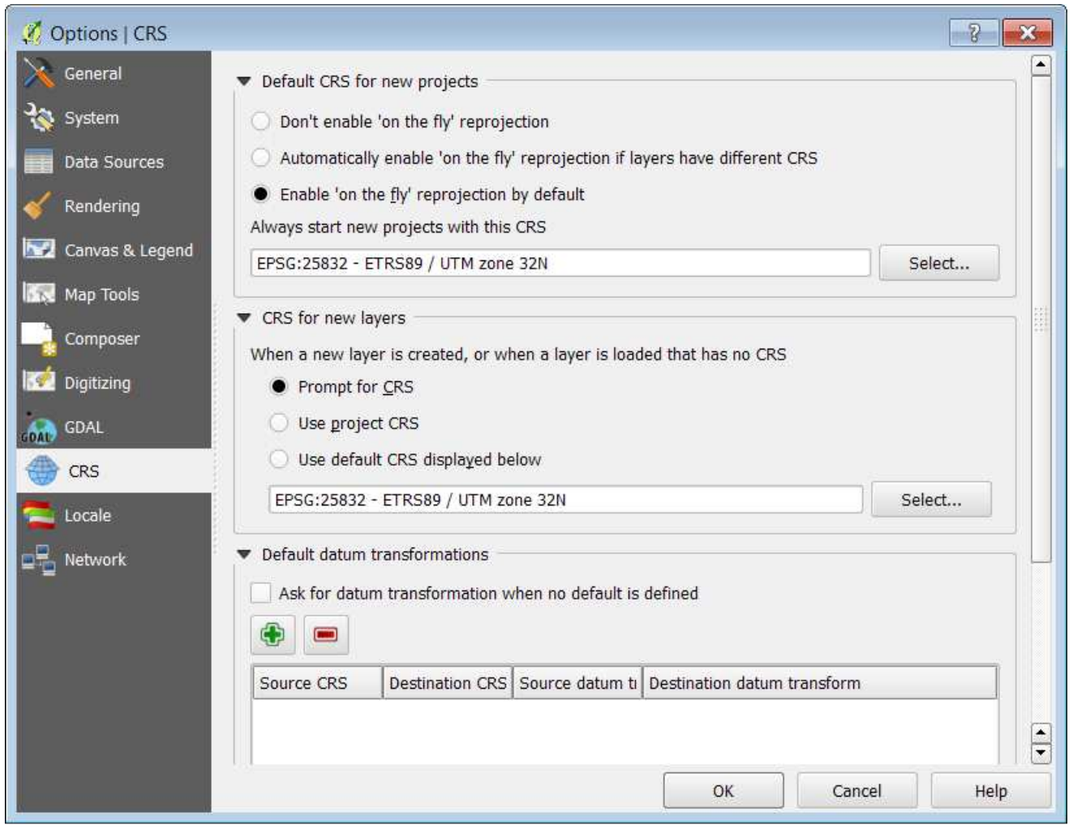
Data: Tree.Zip
Source: Skærmkort from Kortforsyningen.dk



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



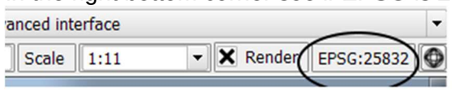
If you have to make changes in this dialog – please restart the program.

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

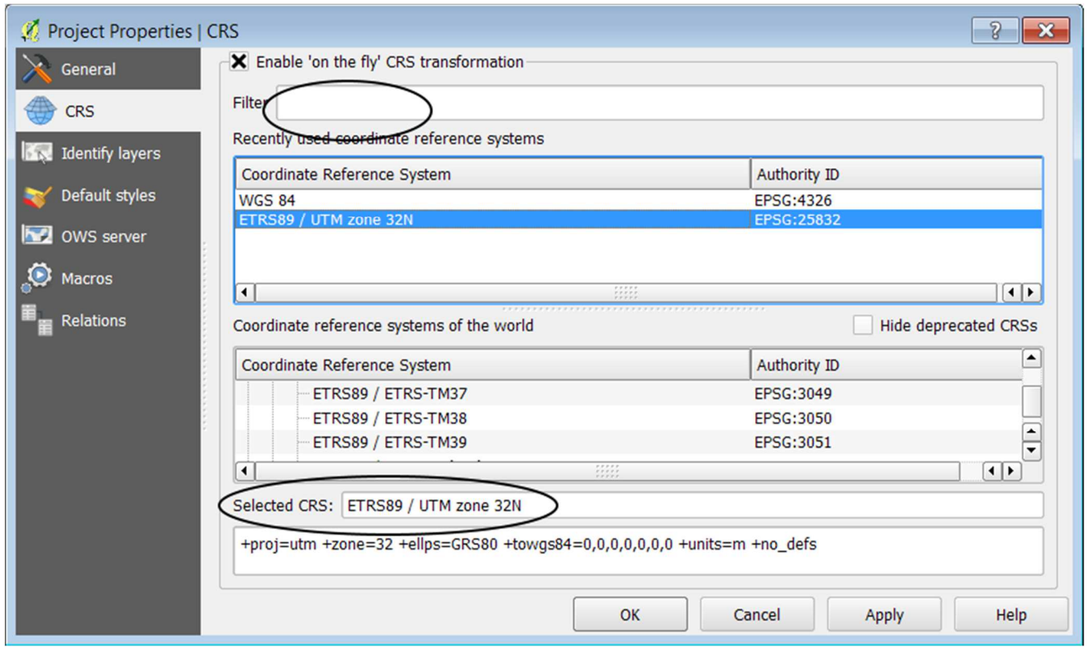
Very important is to keep the project in only one projection: **EPSG 25832**

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



And click **Project>Project properties>CRS**

See in **Selected CRS**.
If it is not correct write in **Filter 25832** and choose on the list.



Save the project
Click **Project> Save**

Open background image

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

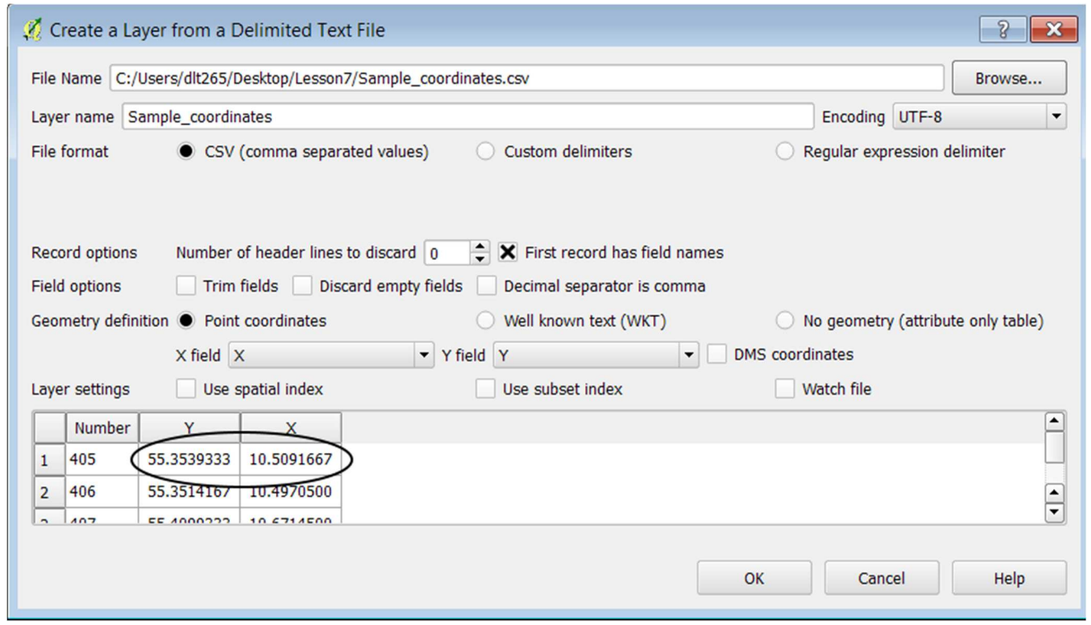
Choose **EPSG 25832**

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



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 As**

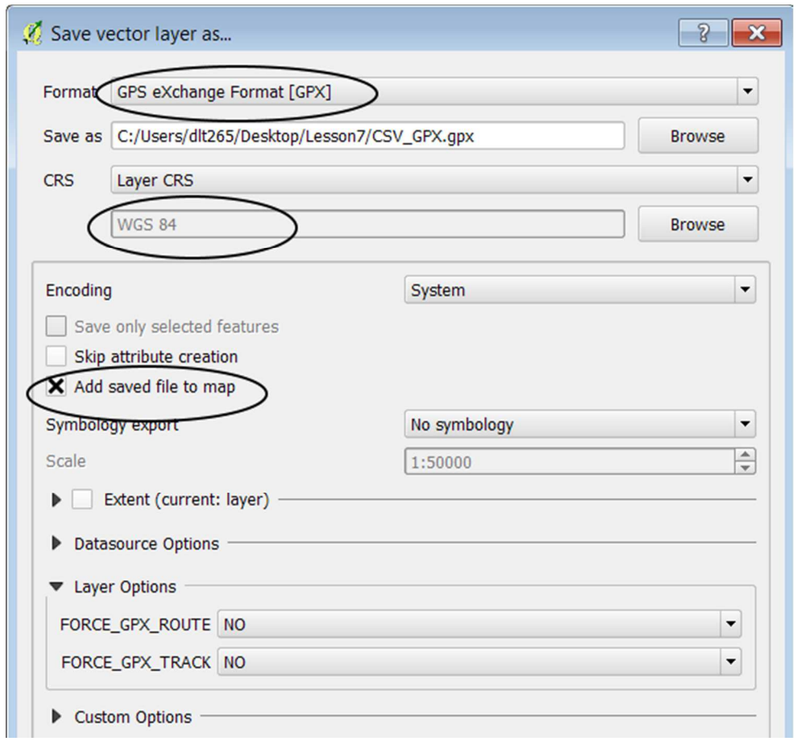
Change **Format** to **GPX**

Click on **Browse** write a file-name

Check CRS is WGS84

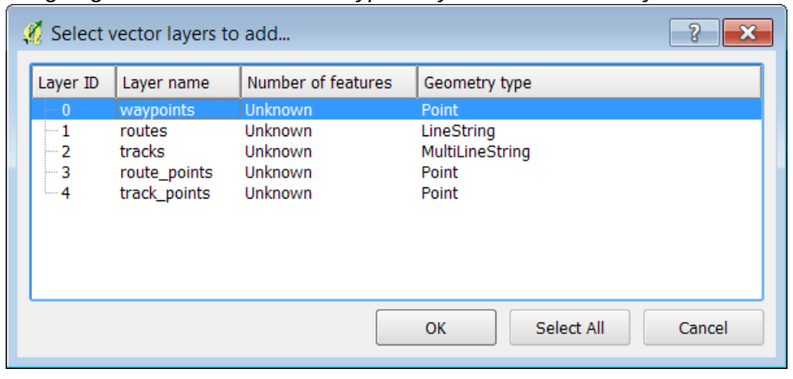
Mark **x** Add saved file to map

Click **OK**



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*



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

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**
- **Save as**

Choose **ESRI Shapefile**

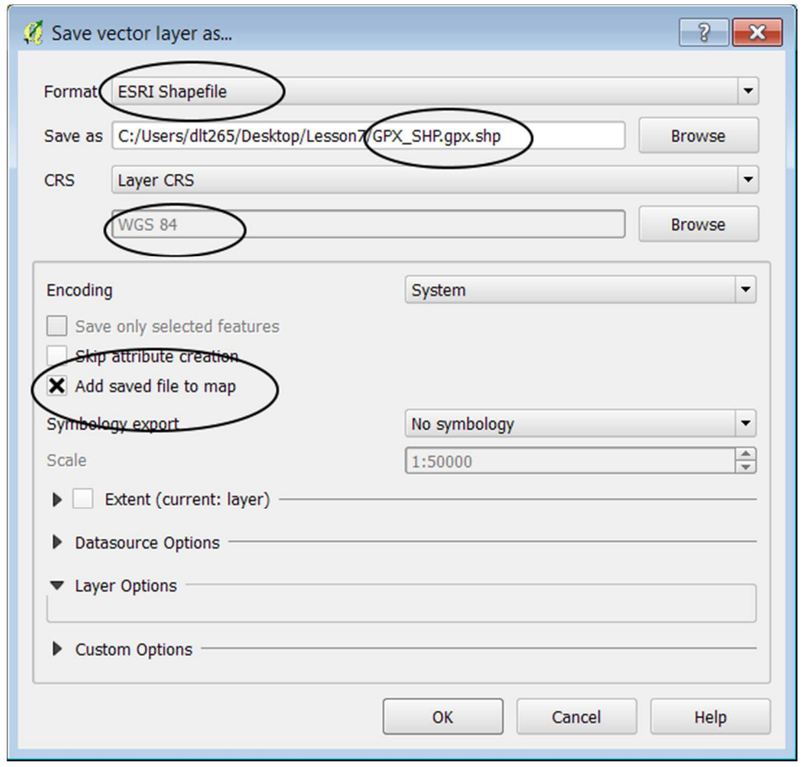
Click on **Browse** write **GPX_SHP**

Check CRS is WGS84

X Add saved file to map

Click **OK**

Close **Waypoints**

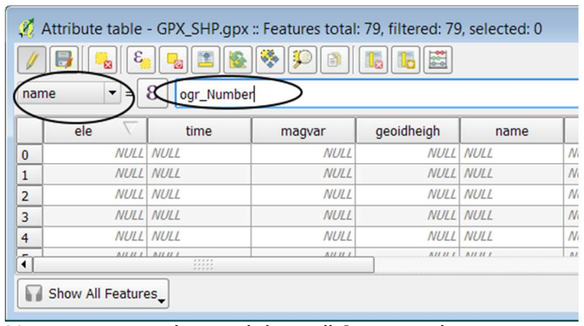


Update and delete coloumns

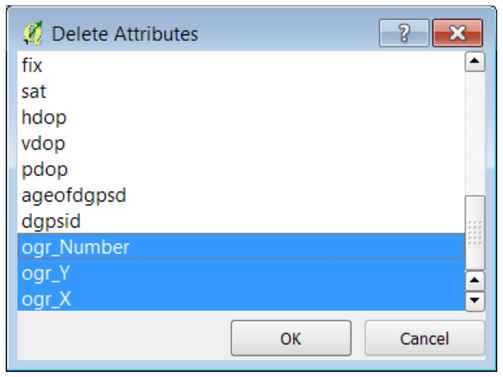
In **Layers** click on **GPX_SHP**
Open Attribute table

Toggle editing 
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**



Next you are going to delete all 3 ogr_ columns



Click on **Delete columns** 

Choose and click **OK**

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.