

Data Visualization by Quantum GIS

1. Data preparation

Station data that can be input to QGIS should be Relation-Table form (Columns-Rows) and specific to CSV (Comma Separated Value format), can prepare in any spreadsheet application. The important thing is need two column for X and Y location.

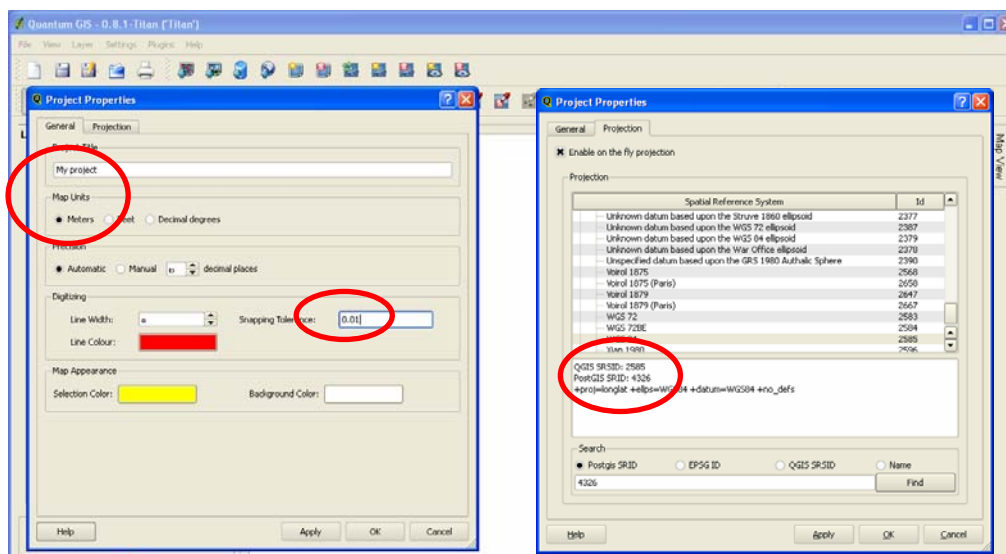
Example of data in CSV format prepared by Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Cruise	Station	MMDDYYhhmm	Longitude	Latitude	BotDepth	Depth	Anguillidae	Muraenidae	Congridae	Ophichthidae	Gonostoma	Stomiidae	
2	se71	1	11/17/2004	11:15	96.749	6.73983	1153	4.9722	0	0	0	0	25.16	
3	se71	2	11/17/2004	16:32	96.2297	6.742	1037	2.9833	0	0	1.6	0	23.96	
4	se71	3	11/18/2004	8:55	96.0665	6.88067	1294	4.9722	0	1.54	0	0	13.85	
5	se71	4	11/19/2004	9:22	95.8533	8.44817	1001	7.9551	0	0	0	0	1.55	
6	se71	5	11/19/2004	16:35	96.1377	9.63433	1116	5.9662	0	0	2.95	0	10.34	
7	se71	6	11/20/2004	15:30	96.2317	10.76	1615	4.9717	0	0	0	17.4	5.8	
8	se71	7	11/21/2004	14:49	96.233	11.7525	2150	3.9772	0	0	7.96	4.78	4.78	
9	se71	8	11/22/2004	14:10	96.2332	12.6807	1136	4.9713	0	0	1.31	2.62	0	
10	se71	9	11/23/2004	12:12	96.7333	12.2608	726	65.612	2	0	2	6	6	
11	se71	10	11/23/2004	18:44	96.7513	11.251	346	68.5963	0	0	1.21	1.21	1.21	
12	se71	11	11/24/2004	1:04	96.7498	10.2658	370	14.9147	0	0	22.6	1.74	24.34	
13	se71	12	11/24/2004	7:11	96.7542	9.24983	365	57.6658	0	0	0	1.92	7.67	
14	se71	13	11/24/2004	13:19	96.751	8.2565	500	49.7142	0	0	0	0	46.01	

2. Create new project of QGIS

Before load any data set to QGIS, always set the project properties;

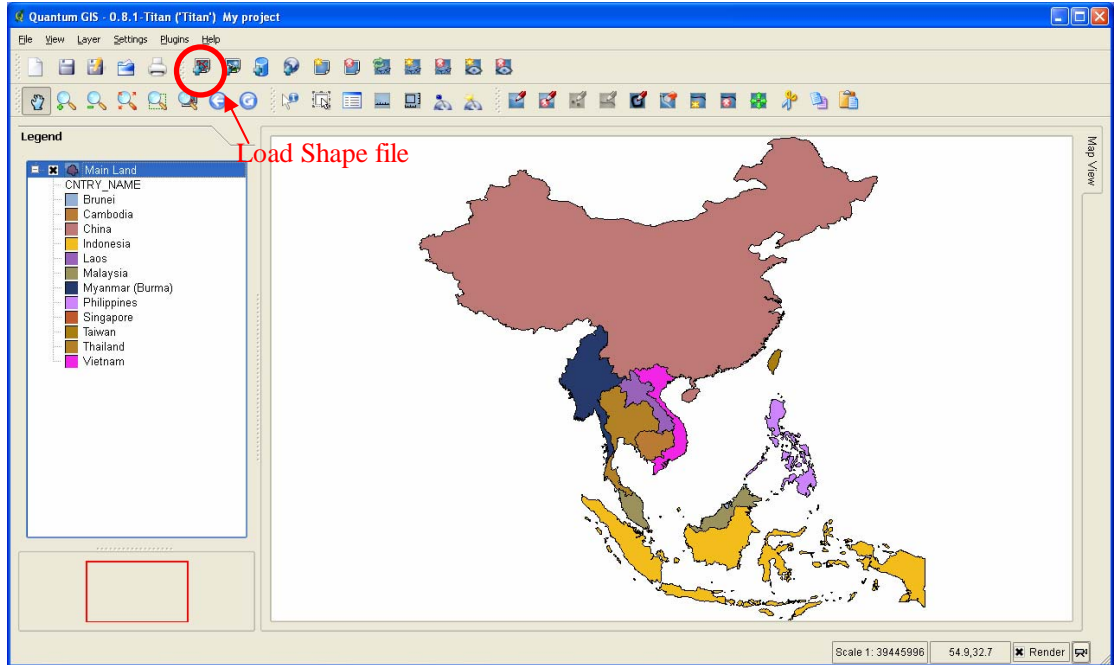
- Project title
- Map unit
- Snapping tolerance
- Map Projection



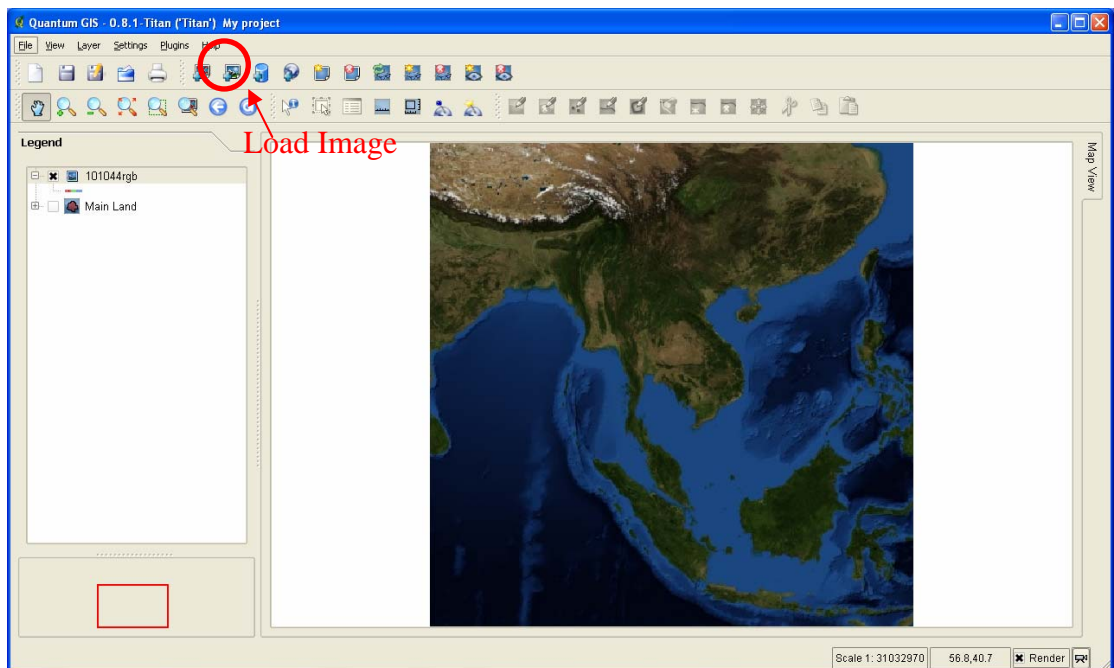
3. Base Map

Base map can be shape file or supported image, in case of image should be geo-reference image (image that has coordinate specific)

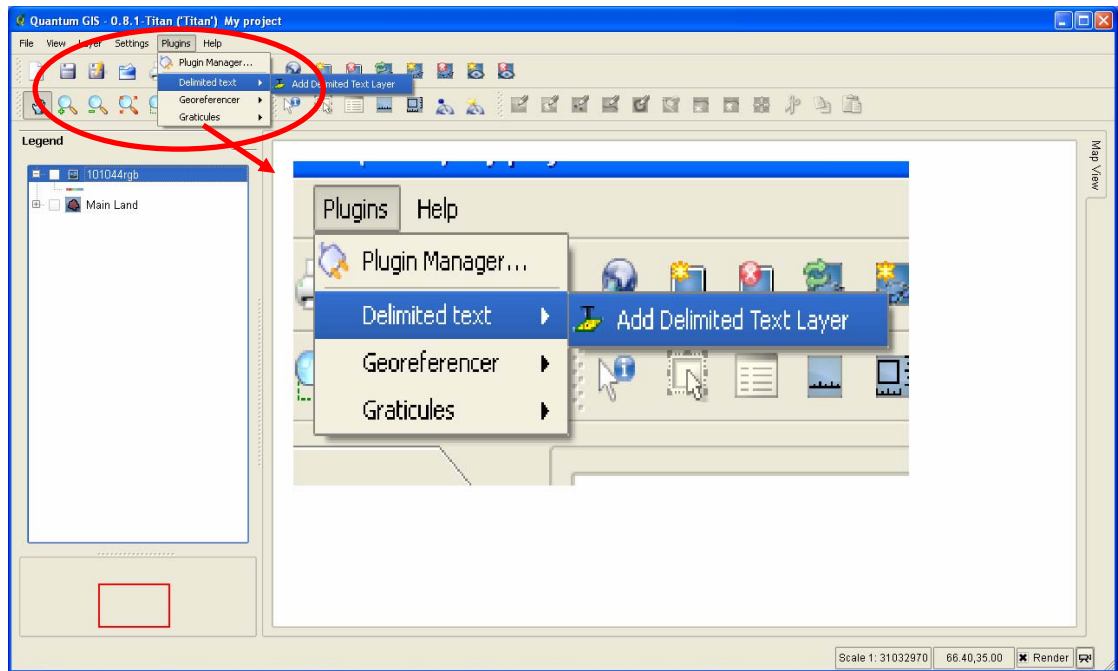
- Shape file data set



- Geo-reference image

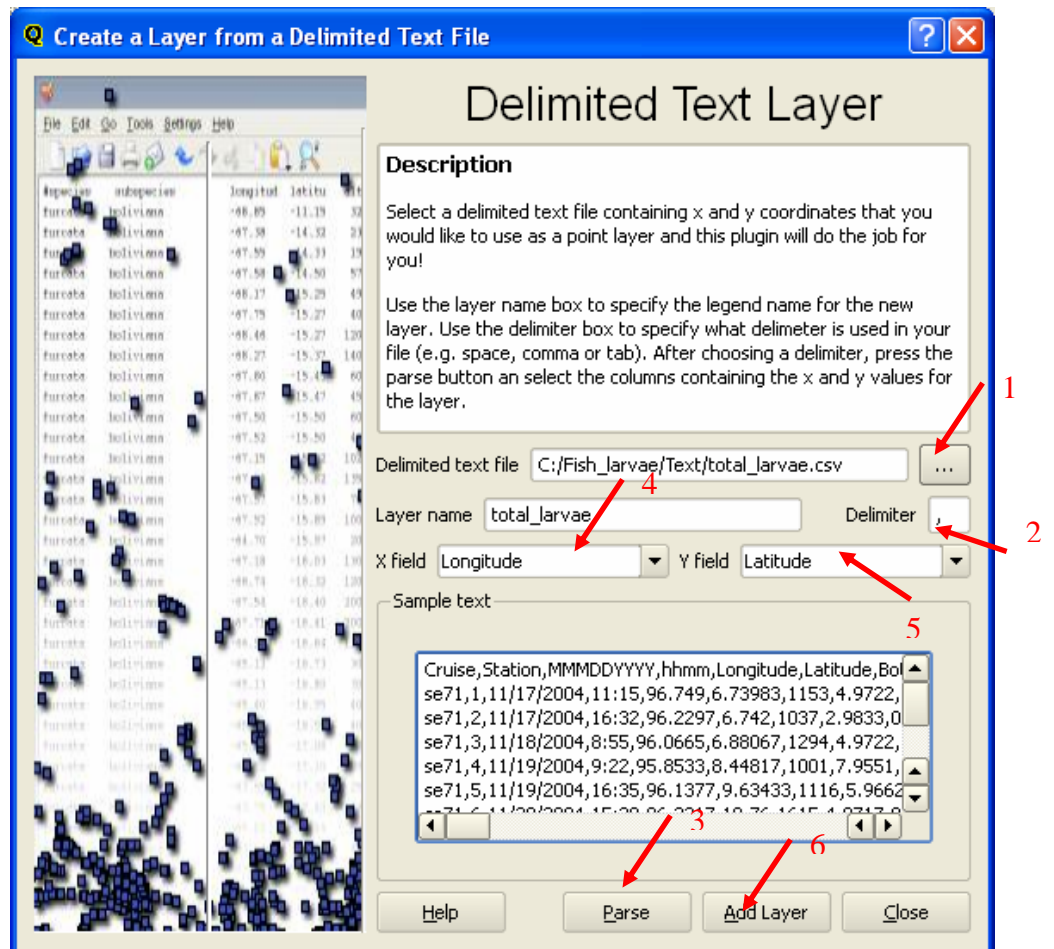


4. Load CSV file to QGIS



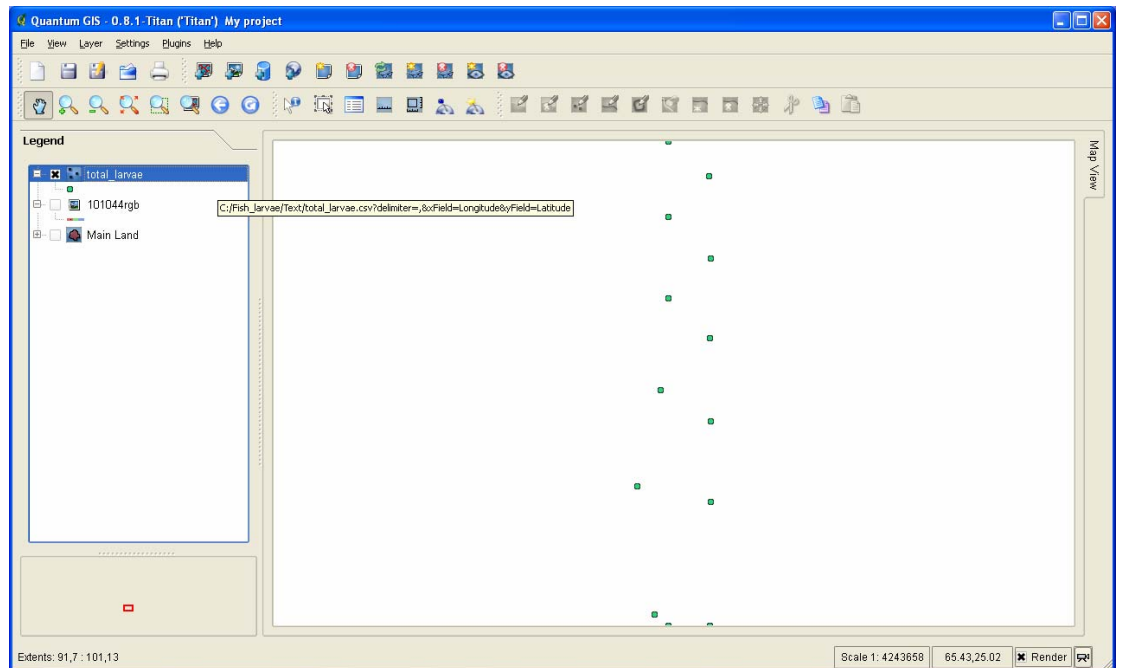
CSV format file that QGIS known as delimited text can be add to project by Plugins :

Delimited text : Add Delimited Text Layer 

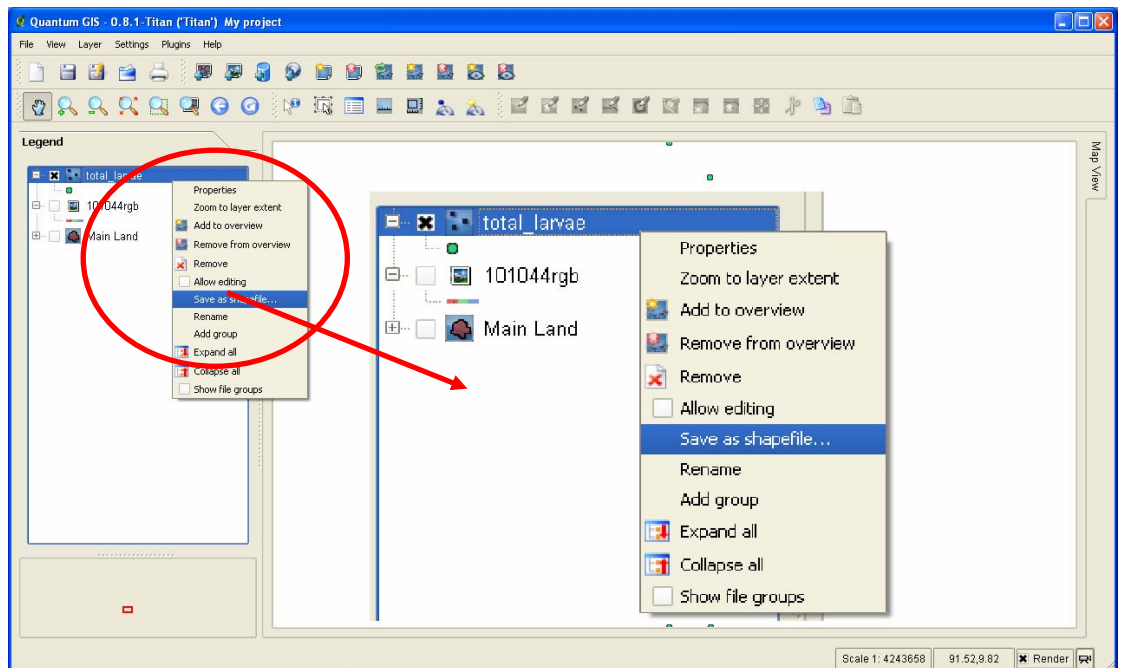


To use delimited plug-in as follow by step as:

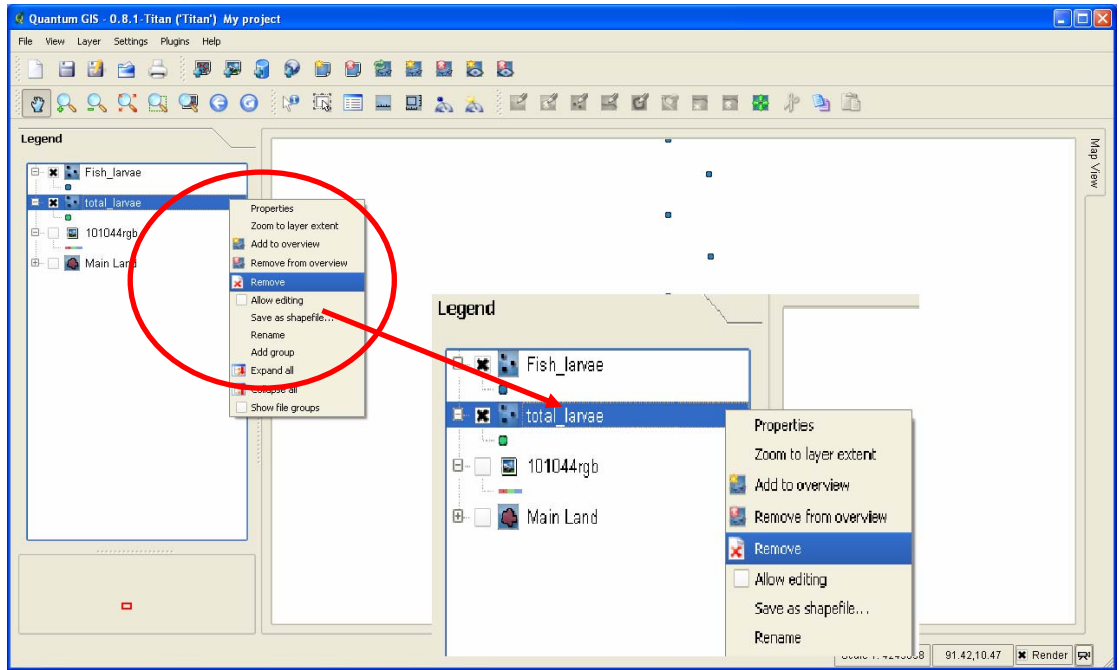
1. Select the CSV file that prepared at first step.
2. Select the separate character by key in, the software allow only a character for a file.
3. Parse the column for separate value by character that selected.
4. Select column for X field.
5. Select column for Y field.
6. Add layer to project if the layer displayed, then can close this window.



Then convert the CSV Layer to the Shape file by Right click at the layer name



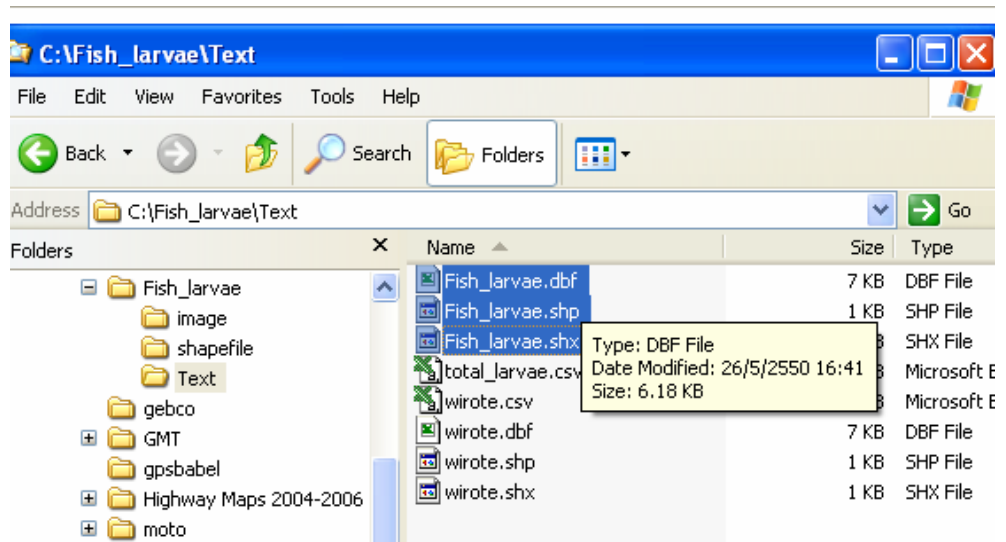
- Then specific path and filename then load again data shape file format to project, at this time can remove the CSV layer file from project for prevent confusing.



5. Modification data type by spreadsheet program

There is limitation of current version of QGIS that always assigned data type to string when loaded from csv file. Therefore you need to modify the data type to be numeric otherwise cannot classification data.

Load the DBF file of shape data set that save as from QGIS to spreadsheet software, in this case using Microsoft Excel



Replace the string value by set a new worksheet and set the formula for get value of string then copy & paste special (value only) from new worksheet to original sheet then set format of column that need to use.

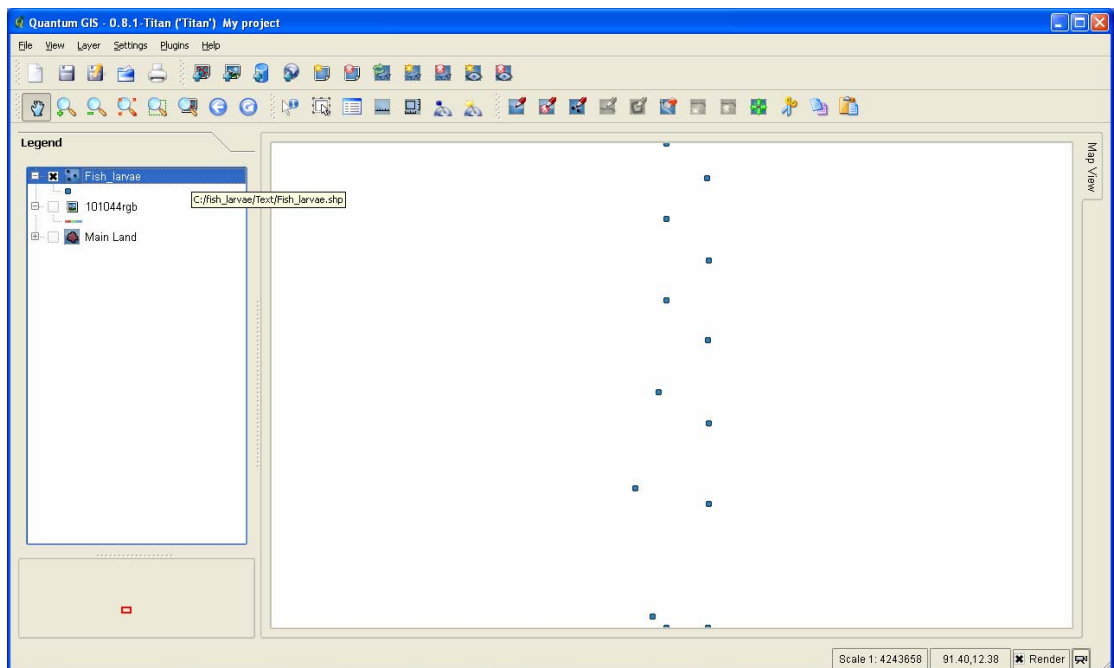
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2							=VALUE(Fish_larvae!G2)			0	0	0	0	0	0	0	0	0	0
3							1037	2.9833	0	0	1.6	0	0	1.6	0	0	0	0	0
4							1294	4.9722	0	1.54	0	0	0	0	0	0	0	0	0
5							1001	7.9551	0	0	0	0	0	0	0	0	0	0	0
6							1116	5.9662	0	0	2.95	0	0	0	0	0	0	0	0
7							1615	4.9717	0	0	0	0	0	0	0	0	0	0	0
8							2150	3.9772	0	0	7.96	0	0	1.59	0	0	0	0	0
9							1136	4.9713	0	0	1.31	0	0	0	0	0	0	0	0
10							726	65.612	0	0	2	0	0	0	0	0	0	0	0
11							346	88.5963	0	0	1.21	0	0	0	0	0	0	0	0
12							370	14.9147	0	0	22.6	0	0	0	0	0	0	0	0
13							385	57.6658	0	0	0	0	0	0	0	0	0	0	0
14							500	49.7142	0	0	0	0	0	3.68	0	0	0	0	0
15																			

The formula to convert string to numeric

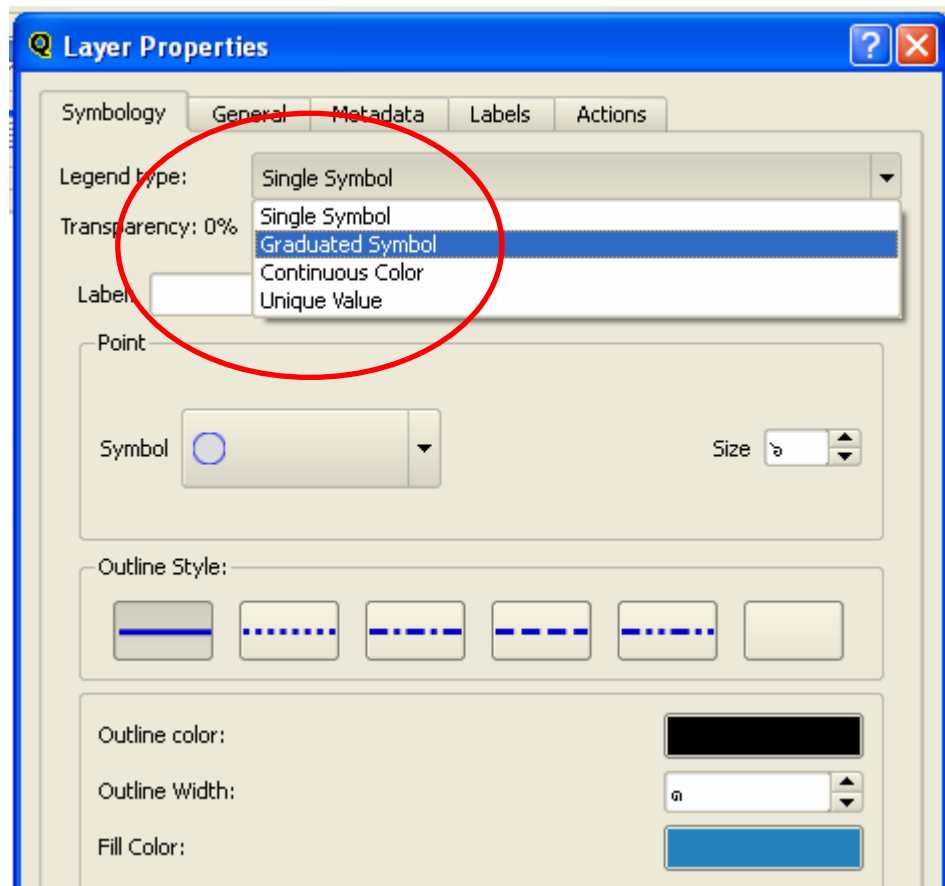
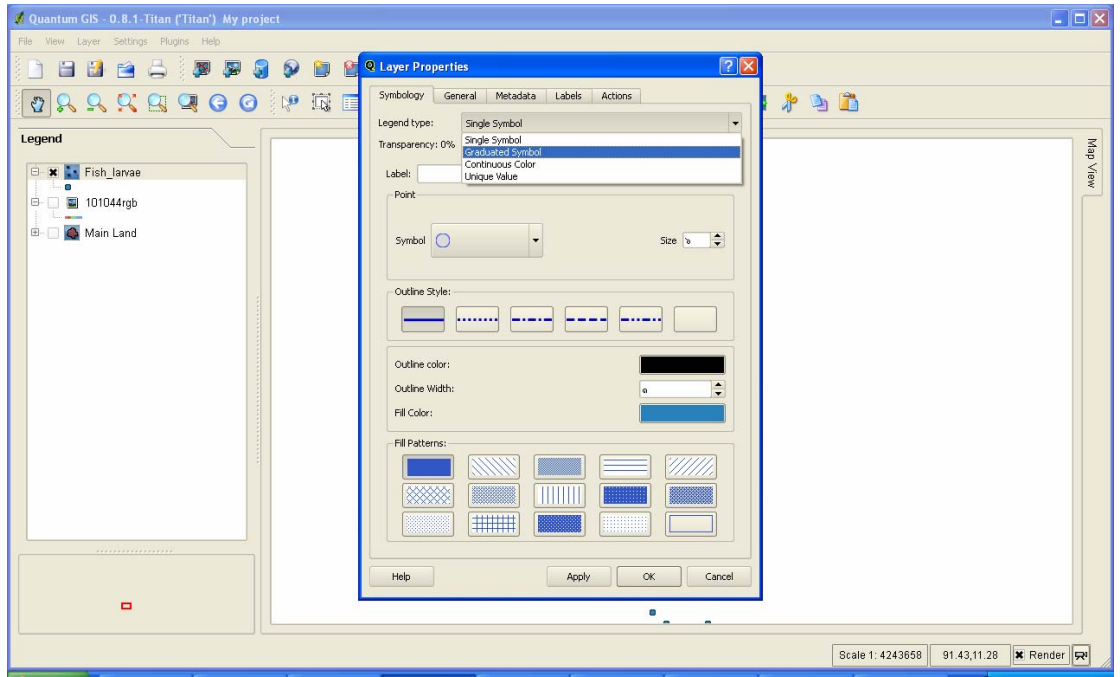
=VALUE(CELL Location)

Then save replace to same name that extension is dbf (**caution** when do this step the number of row must be always same as the original file. If it is not the same, you cannot open shape file.)

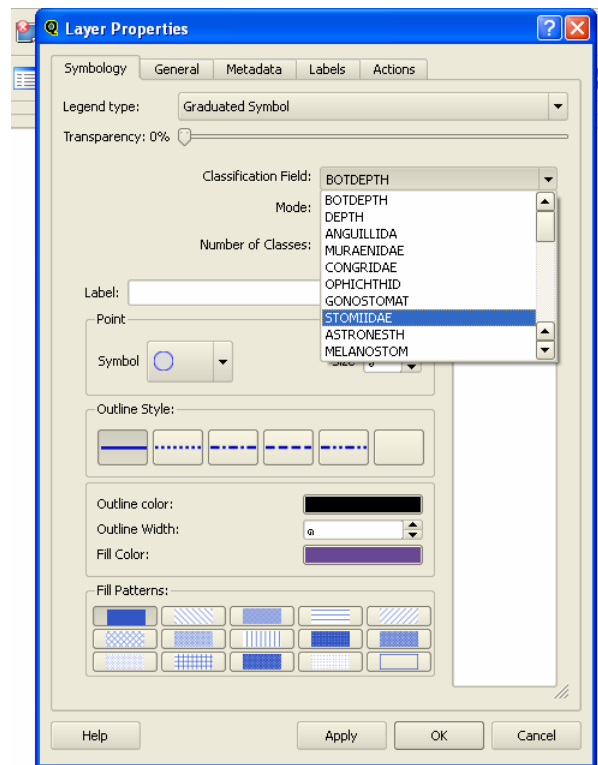
6. Graduate symbol



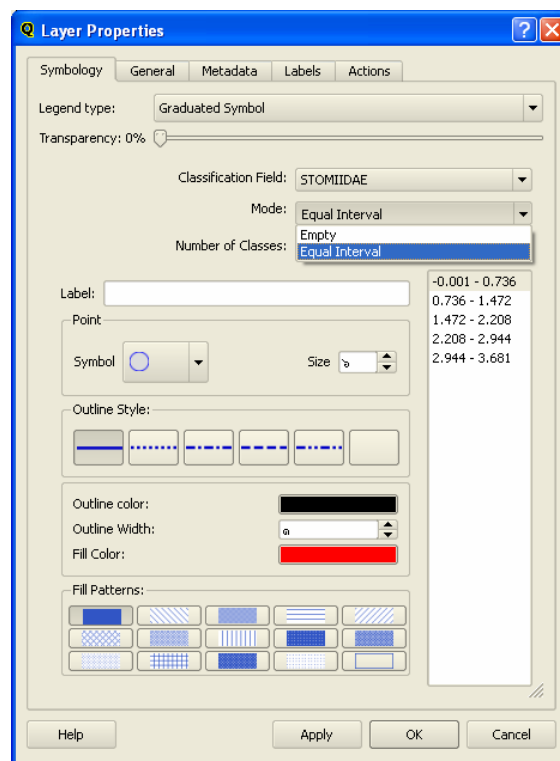
When loading shape file data set to project, automatic assigned for symbol is “single symbol”. You can change type of symbol using “layer property”



After select Legend type to Graduated Symbol, the dialog will change option.

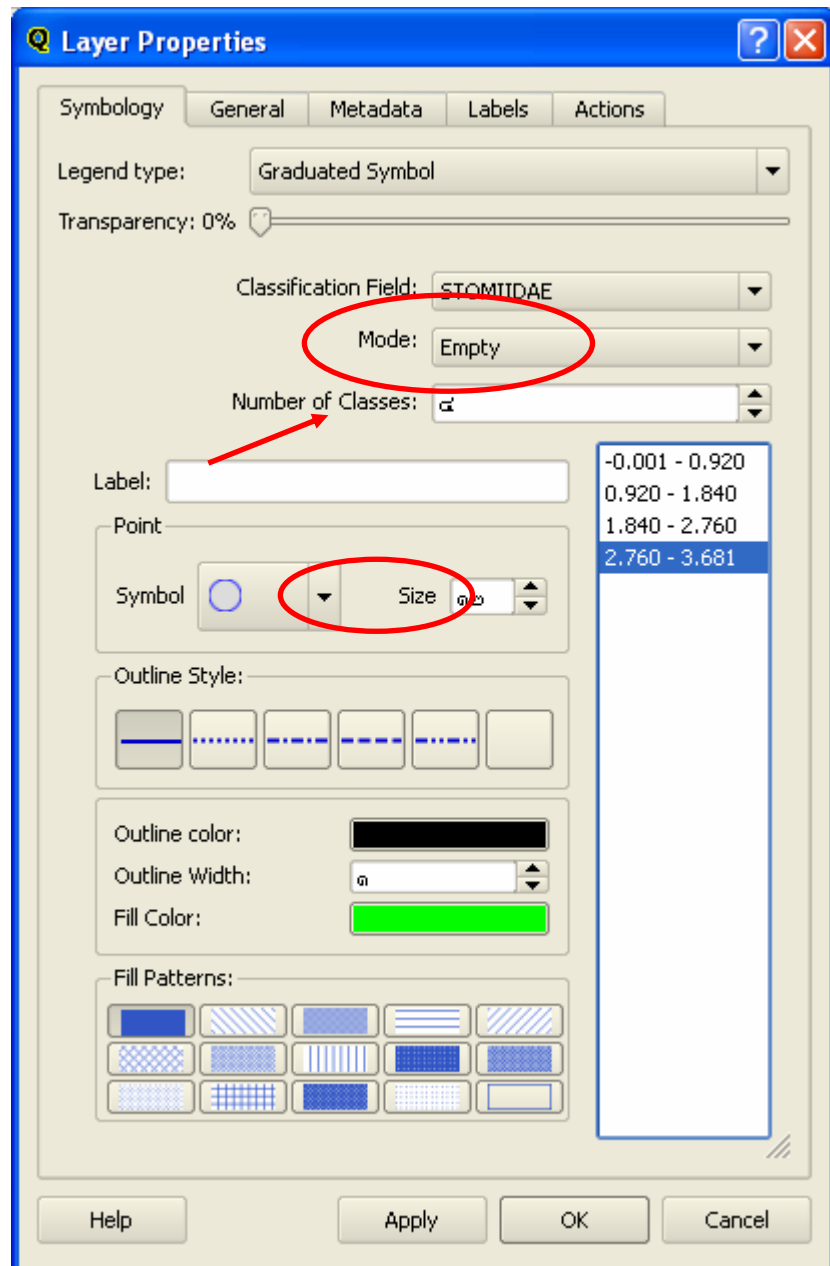


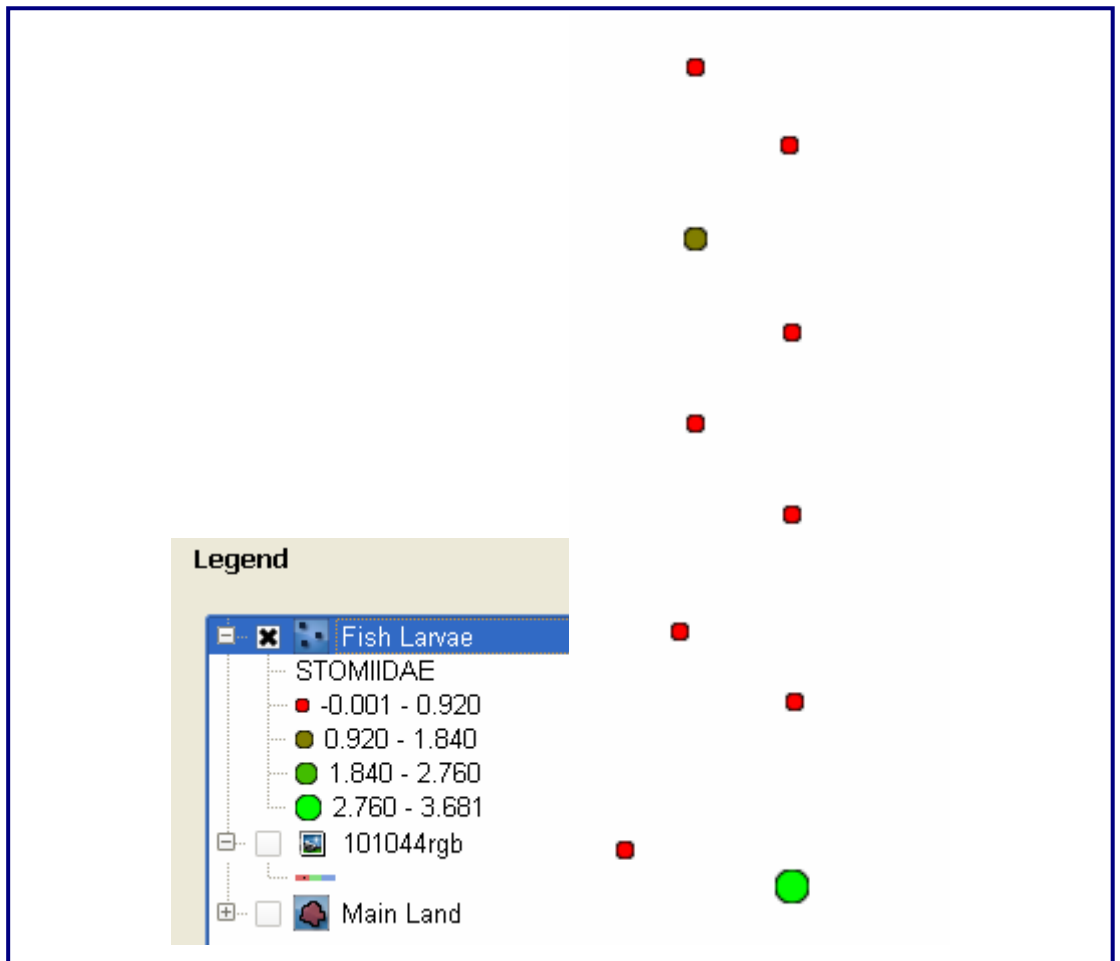
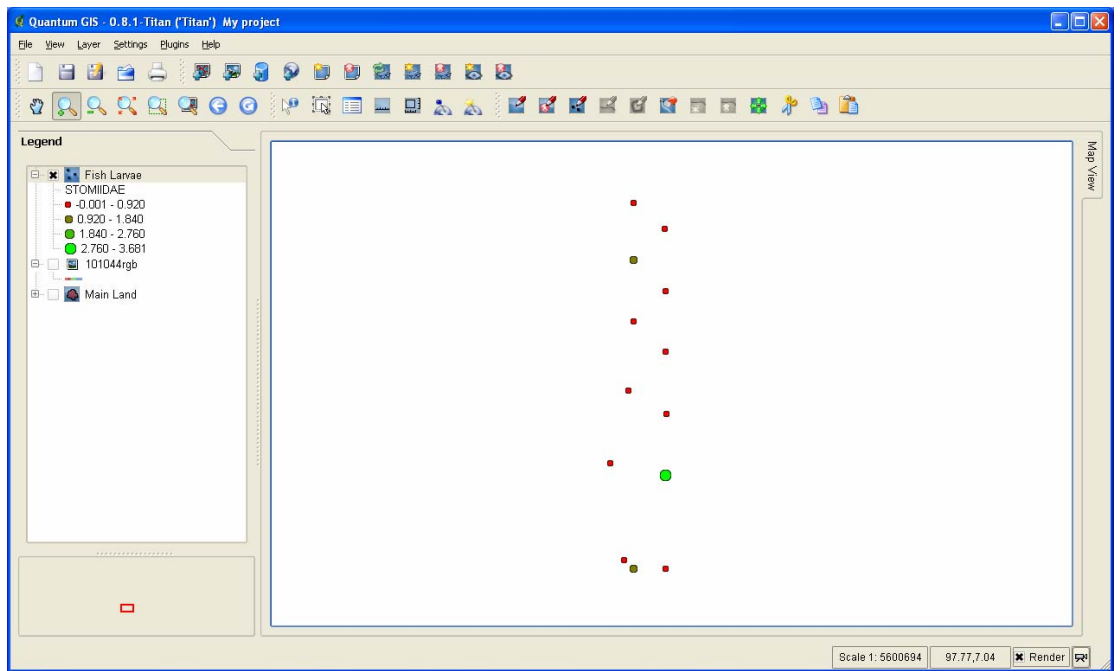
At this step you can select field name to class the data set.



You also can select mode of class to empty or equal interval. If you select equal interval, software will class data for you following the assign number of class. While in empty mode can be

customize class data your self after specified the number of class. You also can customize each class using several type, size and color of symbol.





Next you can do the map composer to print hard copy or export map image for other application or reporting.