



Vector data – Buffer and Clip

QGIS 2.4 - WINDOWS 7 - AUGUST 2014

Goal for this lesson:

In this lesson you will learn how to create a buffer for lines and polygons. The buffers for the two layers are going to be merged into one new layer. The buffers overlap polygons from another layer. To find the overlapping area the clip function is performed. Normally, tool from the Vector-menu is used, but in this lesson you are going to use tools from the Processing-menu.

History: A new regulation in Denmark says that farmers are not allowed to use farmland in a zone 10 m from lakes and streams. In this lesson you have to find the farmland to be taken out of production and calculate the area.

The steps are:

- Create project
- Open layers
- Create buffer 10 m for Lakes
- Create buffer 10 m for Streams
- Merge buffers into one new layer
- Dissolve buffers
- Clip polygons with dissolved buffer
- Calculate area

Data: Buffer.Zip

Source: Markblok data from <https://kortdata.fvm.dk/download/index.html> (Translated and edited),
Lake (Soe) and Stream(Vandloeb_Bred) from Kort10 Kortforsyningen.dk

Start lesson

Open the layers:
Stream.shp
Lake.shp and
agricultural_field2.shp

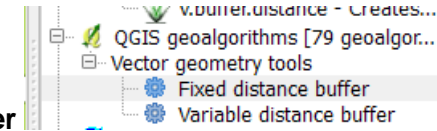
Zoom in for more details



Create buffer

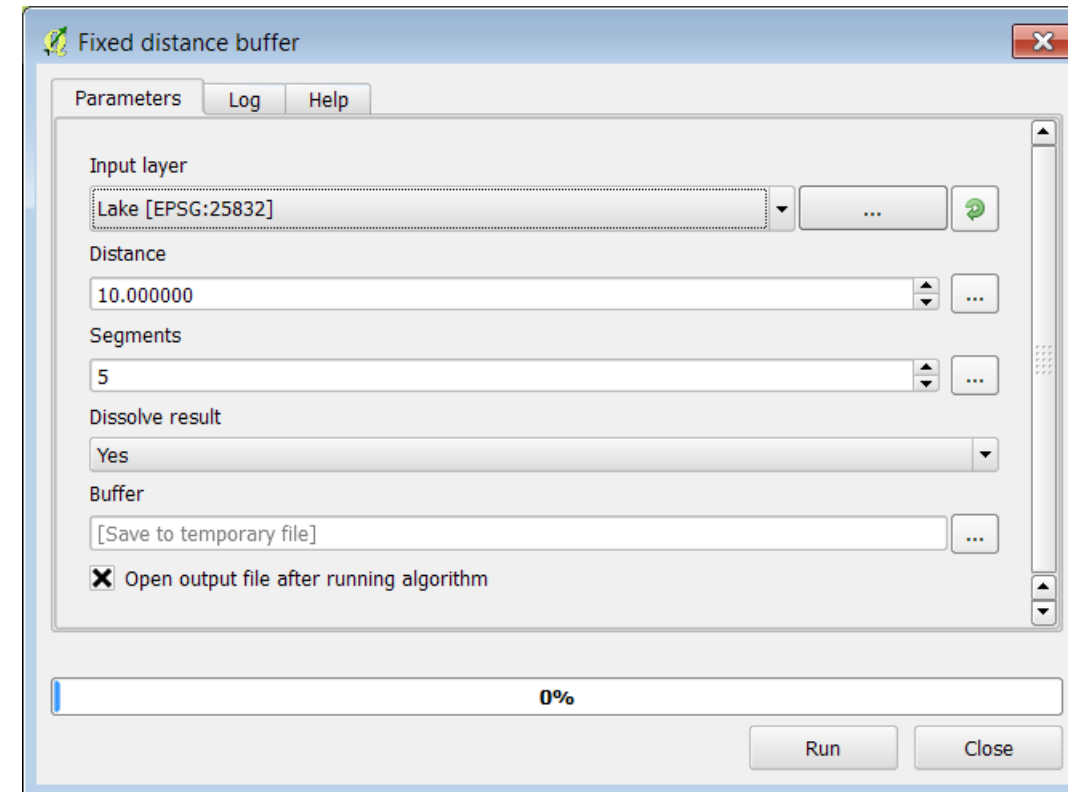
You start by creating a buffer for the lakes. You can choose between a buffer for each object (lake) or to dissolve the buffers into one. In this lesson you only need one buffer for all the objects.

Click on **Processing>Toolbox**
In the search field write **Buffer**



Select and Double click the **Fixed distance buffer**

Input layer choose **Lake**
Click **Run**



In **Layers** rightclick on **Buffer**
Rename to **Lake buffer**

Perform the same on the layer **Stream**

Merge shapes layers

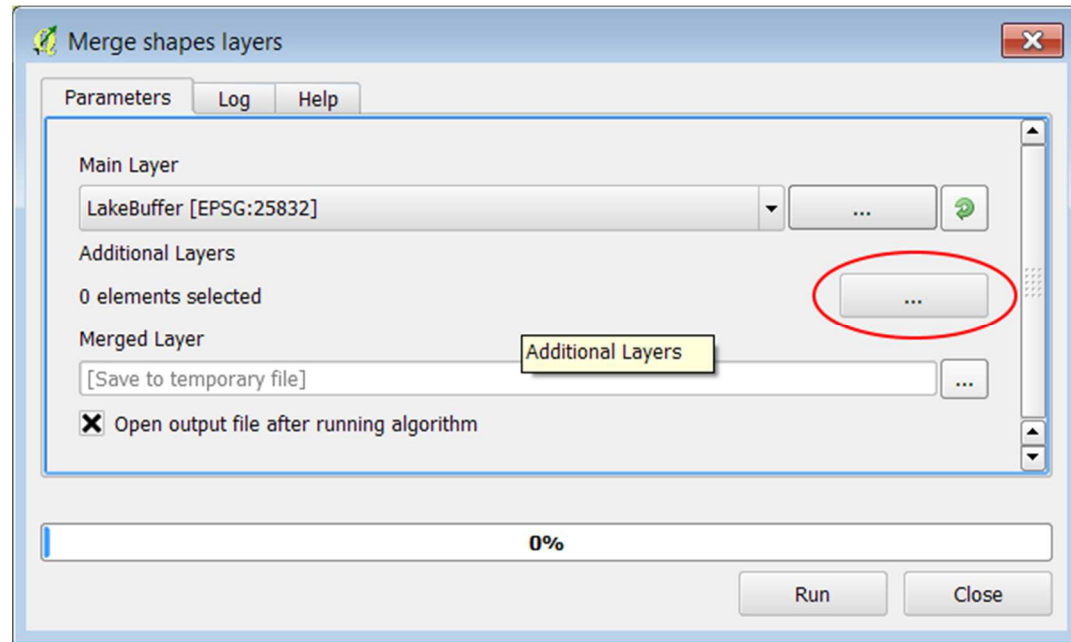
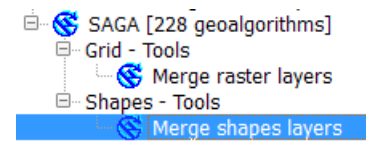
To merge the two buffer layers into one layer
Click on **Processing>Toolbox**
In the search field write **Merge**

Select and Double click the **SAGA>Shapes Merge shapes layers**

In **Main layer** choose **Lake buffer**

Click on the For **additional layers** and choose **Stream buffer**

Click **OK >Run**

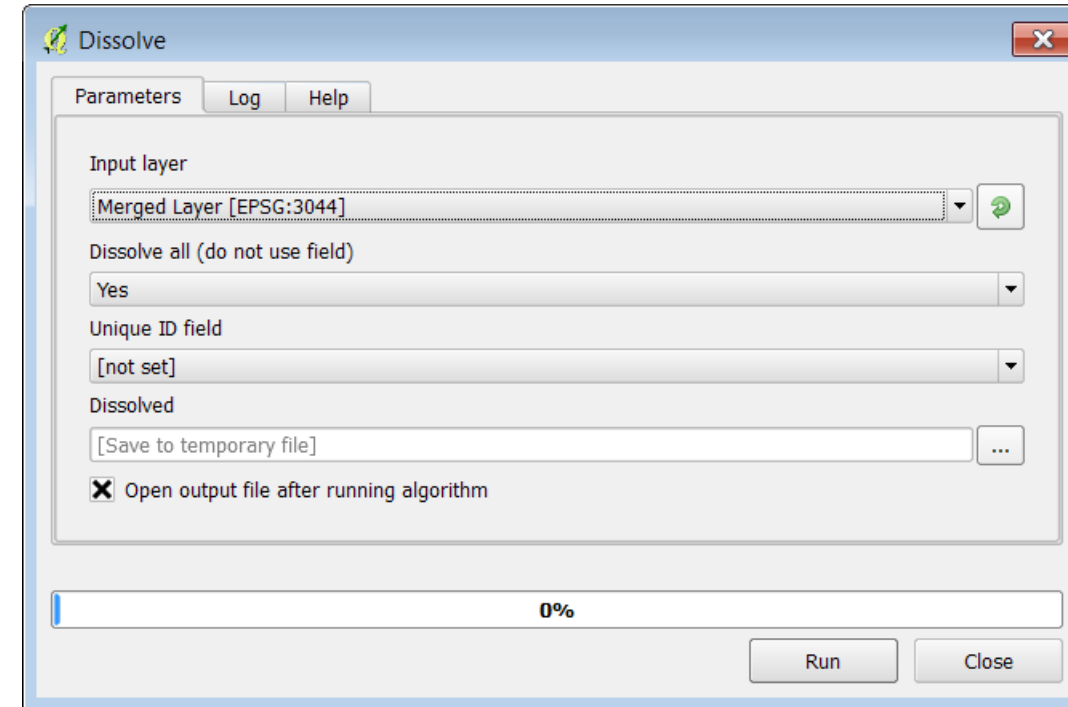
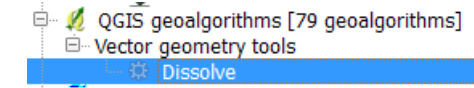


Dissolve

Open the attribute table for the **Merged layer**
There are 2 records. In the next task you have to merge these into one.

Click on **Processing>Toolbox**
In the search field write **Dissolve**

Select and Double click on **Dissolve**
Click **Run**



Close/Remove all layers except **Dissolve** and **agricultural_field_2**
Mark the layers and click on **Remove**

Clip

Just to remember what the entire task is about:

Find the areas where agricultural_field_2 overlaps with the dissolved buffer.

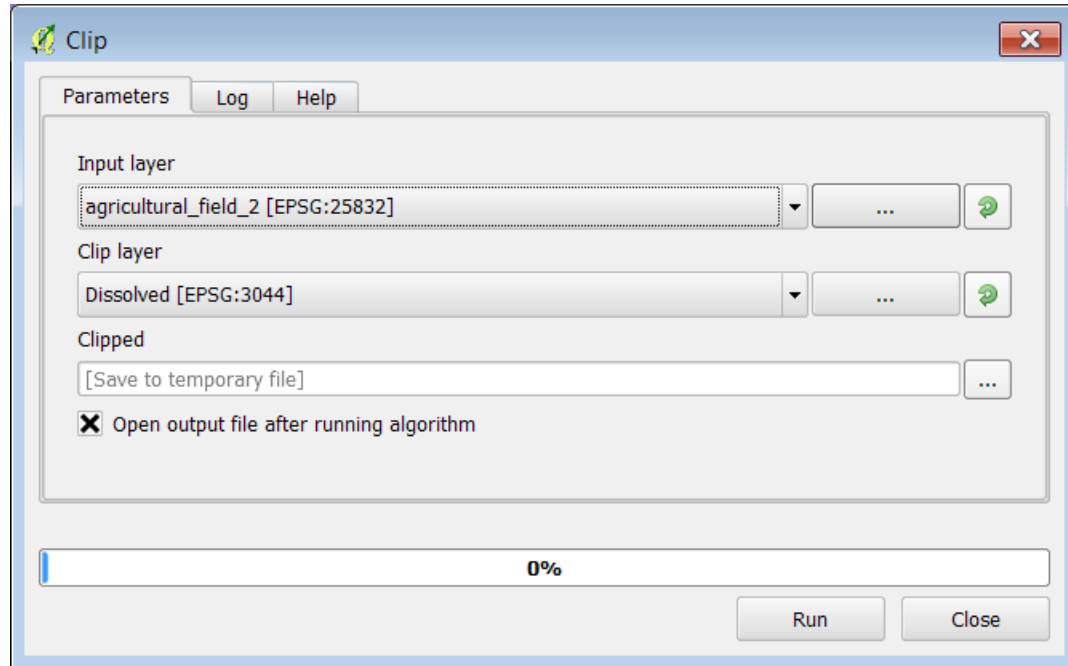
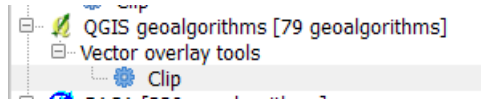
You are going to create a new layer from the Agricultural_field clipped by the dissolved layer. Click on **Processing>Toolbox**

In the search field write **Clip**

Select and Double click on **Clip**

Select layer as shown below

Click **Run**



Close the **Dissolved** layer and see the result **Clipped**.

Calculate area

Save the Clipped as Shape

RightClick on the Layer

Choose Save As

New file name Zone.shp

Open the attribute table for Zone.shp

Select the **Field Calculator** and create a new field to calculate the Area in hectares

