

## QGIS Application - Bug report #5617

### Unexpected results from "union" and "intersection" tool, maybe others

2012-05-18 05:47 AM - Marica Landini bulma

|  |                 |                                     |
|--|-----------------|-------------------------------------|
| <b>Status:</b>   | Closed          |                                     |
| <b>Priority:</b>   | Normal          |                                     |
| <b>Assignee:</b>   |                 |                                     |
| <b>Category:</b>   | Processing/QGIS |                                     |
| <b>Affected QGIS version:</b>  | master          | <b>Regression?:</b>                 |
| <b>Operating System:</b>   |                 | <b>Easy fix?:</b>                   |
| <b>Pull Request or Patch supplied:</b>   |                 | <b>Resolution:</b>                  |
| <b>Crashes QGIS or corrupts data:</b>  |                 | <b>Copied to github as #:</b> 15188 |
| <b>Description</b>   |                 |                                     |
| <p>dear all.</p> <p>we discovered that there is an incorrect behavior with the geoprocessing functions in qGis with a particular shape of polygons:</p> <p>when we try to do an "union" function between the shapefile called A and shapefile called B, the result it is NOT CORRECT.</p> <p>you can find attached the test data related to this problem containing:</p> <ul style="list-style-type: none"><li>- shapefile A (input of Union);</li><li>- shapefile B (input of Union);</li><li>- shapefile C (NOT CORRECT output of QGIS of Union A + B, same result as Union B + A);</li><li>- shapefile D (CORRECT output Arcgis of Union A + B);</li></ul> <p>the problem is when the shape of the polygon in B shapefile produces island in the polygon in shapefile A, and the border of these islands in B is coincident with the border of the polygon in A.</p> <p>we are trying with:</p> <ul style="list-style-type: none"><li>- SO: winxp;</li><li>- versions of qGis: 1.7.x (until 1.7.4-5), last dev (1.9.90) and 1.8, installed with osgeo4w installer or standalone installer;</li><li>- gdal: 1.8 or 1.9, same behavior;</li><li>- plugin: ftools &amp; geoprocessing</li><li>- functions: union, intersect (we tried just these two...);</li></ul> <p>the incorrect behaviour is that in the output shapefile C lacks one (or more) parts of the part of the polygon B falling in the polygon A.</p> <p>we hope that this is clear, in other case we can explain better.</p> <p>we think that this problem is very important, we are sending to you a simplified shapefiles, but in our institution we discovered this bad behavior was discovered on a real polygons, creating serious problems to our efforts to share qGis internally with our colleagues.</p> |                 |                                     |

thanks a lot.

## Associated revisions

### Revision 049f5ca8 - 2012-05-22 01:22 PM - Alexander Bruy

fix #5617. Patch submitted by Salvatore Larosa, thanks!

## History

### #1 - 2012-05-19 03:08 PM - Giovanni Manghi

- *Category set to 44*
- *Status changed from Open to Feedback*

I'm not sure it is a QGIS issue at all: as this operations are done through the GEOS library it may be a GEOS issue after all, but as I'm not really an expert I would like to ear about more experienced people, that I added to this ticket as watchers.

Anyway I can confirm the issue: it seems that if the two polygons "share" a segment the result is not the expected one.

I tested (intersection) also PostGIS and if the two polygons "share" a segment then the result is a geometry collection that as we know is not handled by QGIS so is necessary to extract the elements of a specified type for example with `ST_CollectionExtract`.

Again in PostGIS if the two polygons have only overlapped nodes (and not segments) then the result is multigeometry that can be viewed in QGIS and is correct, on the other hand the same situation with shapefiles (and intersection) come out empty.

### #2 - 2012-05-19 03:53 PM - Giovanni Manghi

- *Subject changed from PROBLEM with the geoprocessing functions with particular polygon shapes to Unexpectes results with the "union" and "intersection" tools, maybe others*

### #3 - 2012-05-19 04:30 PM - Jürgen Fischer

- *Subject changed from Unexpectes results with the "union" and "intersection" tools, maybe others to Unexpected results from "union" and "intersection" tool, maybe others*

### #4 - 2012-05-20 07:04 AM - Salvatore Larosa

Also, I tested Line Intersection and Clip tools but w/out success I always get a blank vector!

In PostGIS, as Giovanni said, `ST_Intersection` generates a `GEOMETRYCOLLECTION` with 1 `LINestring` and 3 `POLYGON`, but expected is 2 `LINestring` and 3 `POLYGON`!!!

Maybe I am wrong but I think the shared segment on the left has some problem!

I do not exclude that there may be a GEOS bug!!

### #5 - 2012-05-20 08:33 AM - Giovanni Manghi

Salvatore Larosa wrote:

*Also, I tested Line Intersection and Clip tools but w/out success I always get a blank vector!*

*In PostGIS, as Giovanni said, ST\_Intersection generates a GEOMETRYCOLLECTION with 1 LINestring and 3 POLYGON,*

*but expected is 2 LINESTRING and 3 POLYGON!!!  
Maybe I am wrong but I think the shared segment on the left has some problem!*

Hi Salvatore,

probably the "shared" segment on the left is not perfectly overlapped between the two polygons, so this may explain why the result has just 1 linestring. In any case I repeated the "exercise" with polygons digitized by me, similar to the provided ones, but with perfectly overlapping segments and the result (with shapefiles) is the same.

**#6 - 2012-05-21 07:41 AM - Salvatore Larosa**

Giovanni Manghi wrote:

*Hi Salvatore,  
probably the "shared" segment on the left is not perfectly overlapped between the two polygons, so this may explain why the result has just 1 linestring. In any case I repeated the "exercise" with polygons digitized by me, similar to the provided ones, but with perfectly overlapping segments and the result (with shapefiles) is the same.*

Yes, I know! but if the final result is the D shapefile, I supposed that is perfectly overlapped!

Anyway, today I worked on this issue and I solved many problems! It seems to be not a GEOS bug!

I'll do a git pull request on!

Also I noticed that Clip, Union and Intersect tools do not work properly if provider of input layers is PostGIS, can you confirm?

**#7 - 2012-05-21 07:43 AM - Giovanni Manghi**

*Anyway, today I worked on this issue and I solved many problems! It seems to be not a GEOS bug!  
I'll do a git pull request on!*

cool!

*Also I noticed that Clip, Union and Intersect tools do not work properly if provider of input layers is PostGIS, can you confirm?*

yes, anything used as input in the ftools tools.

**#8 - 2012-05-22 04:32 AM - Alexander Bruy**

- Status changed from Feedback to Closed

Fixed in changeset commit:"049f5ca83a93b5900d2c828b213db566c4f7ac9c".

**#9 - 2017-05-01 01:22 AM - Giovanni Manghi**

The "ftools" category is being removed from the tracker, changing the category of this ticket to "Processing/QGIS" to not leave the category orphaned.

Files

|                 |        |            |                      |
|-----------------|--------|------------|----------------------|
| shape_union.zip | 6.6 KB | 2012-05-18 | Marica Landini bulma |
|-----------------|--------|------------|----------------------|