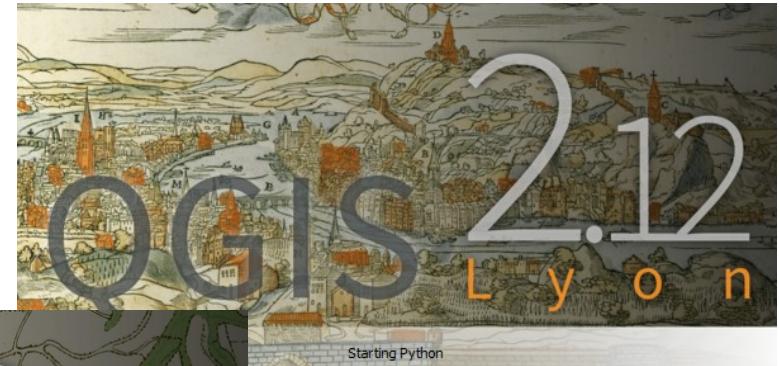
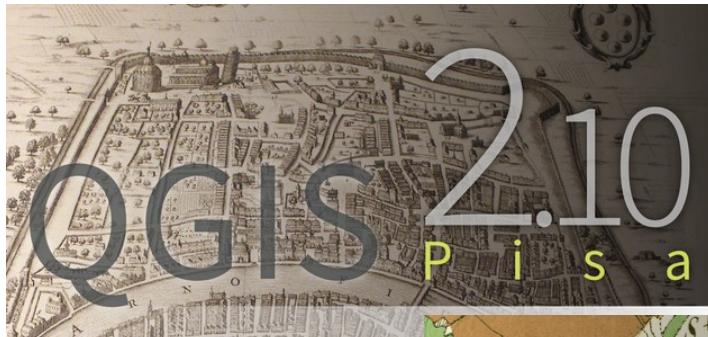


Selected QGIS Improvements



2.10 to 2.16



Kanton Zug



Andreas Neumann (GIS-Fachstelle, Kanton Zug, Switzerland)

Visual Change Logs

- <http://www.qgis.org/en/site/forusers/visualchangelogs.html>
- Since QGIS 2.0

The screenshot shows the QGIS website's navigation bar at the top, featuring the QGIS logo, version 2.14.3, and links for 2.8.9 (LTR), DISCOVER QGIS, FOR USERS, GET INVOLVED, DOCUMENTATION, a search bar, and language selection (English). Below the bar, the left sidebar lists various documentation categories under 'FOR USERS'. The 'Changelog for QGIS 2.14' link is highlighted with a blue box. The main content area is titled 'Changelog for QGIS 2.14' and features a large, semi-transparent watermark of the text 'QGIS 2.14 Essen' overlaid on a historical map of the city of Essen. A small note at the bottom right of the map says 'Foto Courtesy of Stadt Essen'. Below the title, a paragraph explains the changelog is for the next release (2.14) and mentions Essen as the host city for developer meetups. A section titled 'Long Term Release' is also present.

DISCOVER QGIS
FOR USERS
Download QGIS
Visual Changelogs
Changelog for QGIS 2.14
Current QGIS Sponsors
General
Analysis tools
Browser
Data Providers
Data management
Digitising
Labelling
Layer Legend
Map Composer
Plugins
Processing
Programmability

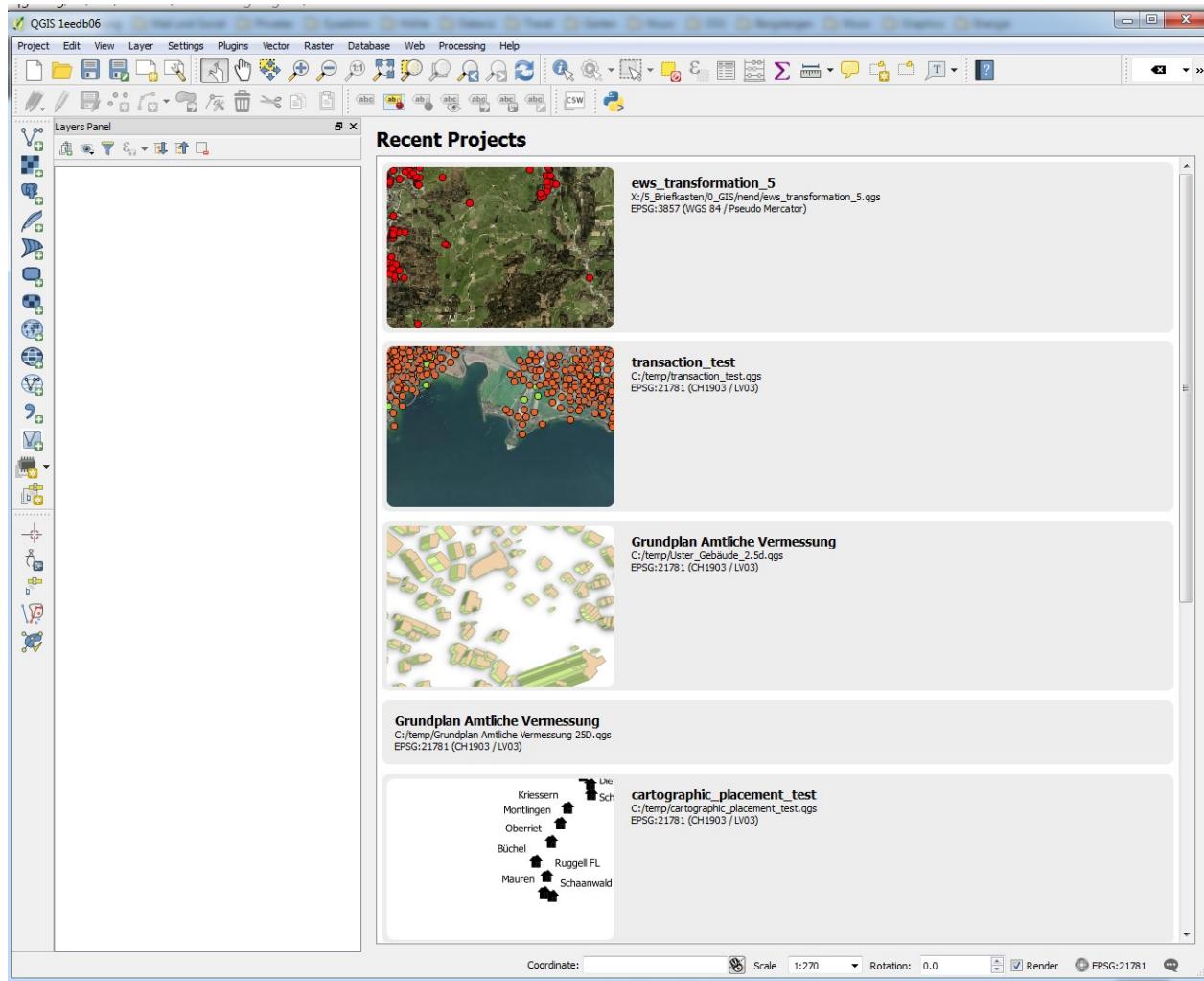
Changelog for QGIS 2.14

This is the changelog for the next release of QGIS - version 2.14 'Essen'. Essen was the host city to our developer meet ups in October 2012 and 2014.

Long Term Release

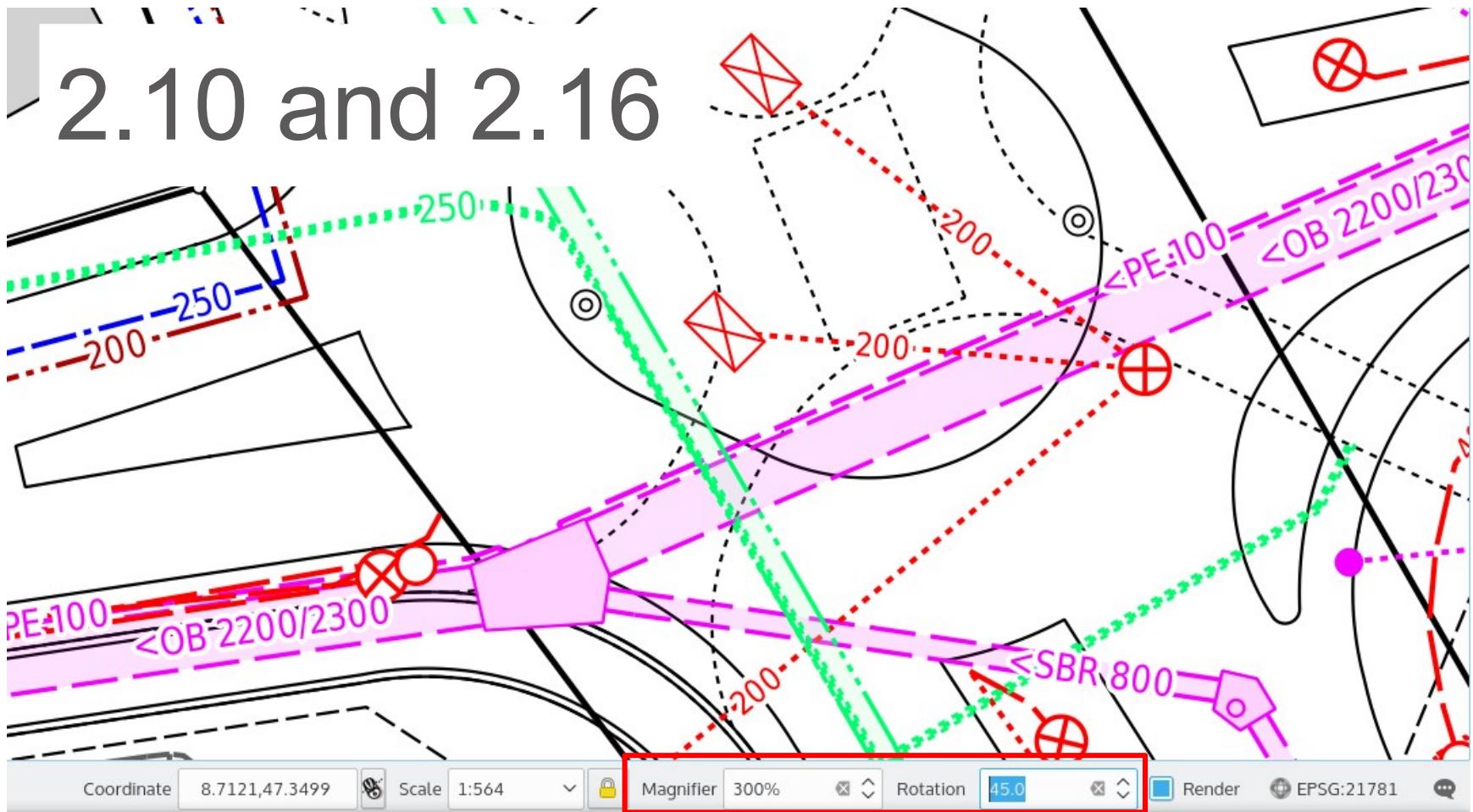
This is a special release since it is designated an 'LTR' (Long Term Release). LTR releases will be supported with backported bug fixes for **one year**, and will be in permanent feature freeze (i.e.

Startscreen with recent projects

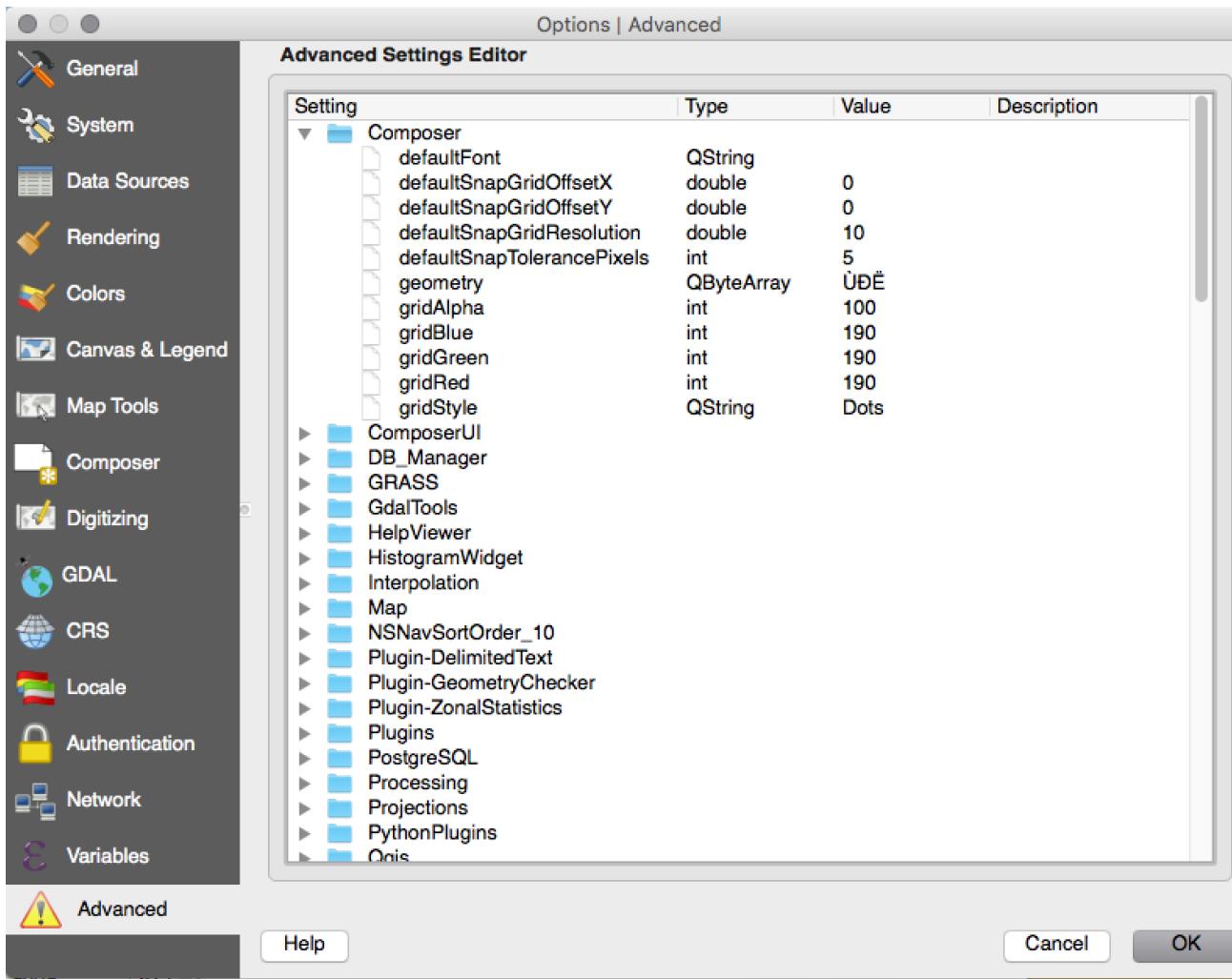


2.12

Rotation and Magnifier Controls in Status Bar



Central Settings Editor

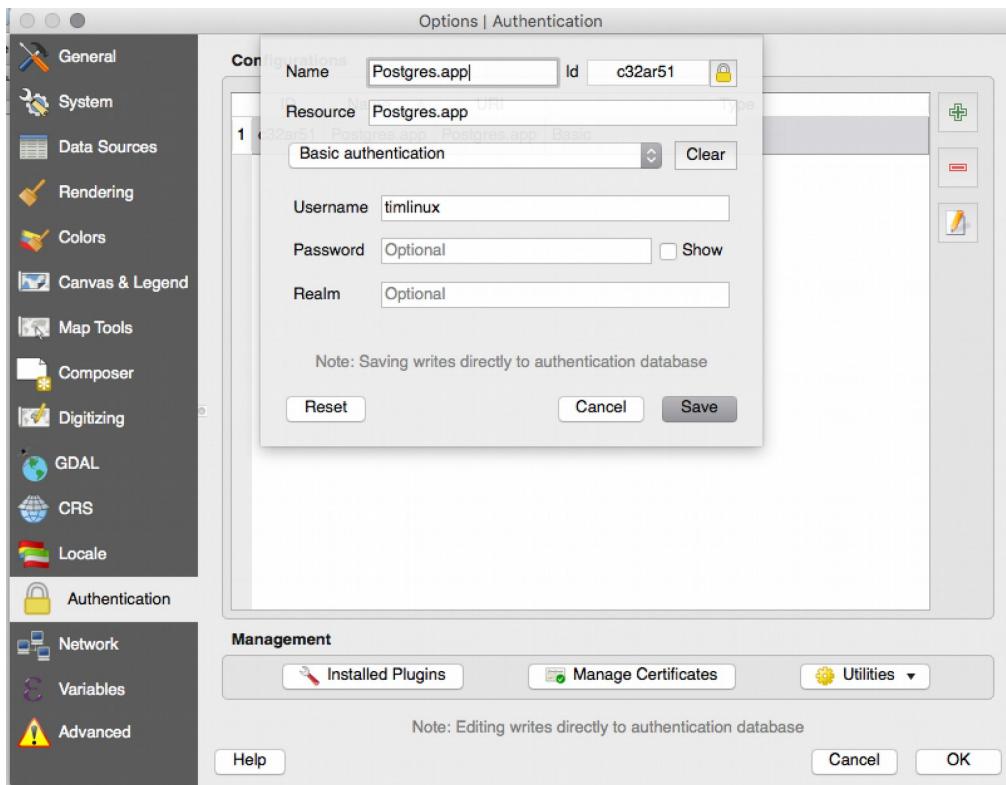


Alternative
central view to
all settings in
QGIS

Be careful!

2.12

Security - Encrypted passwords



Integrated password manager with master password

Encrypted passwords stored in SQLite DB

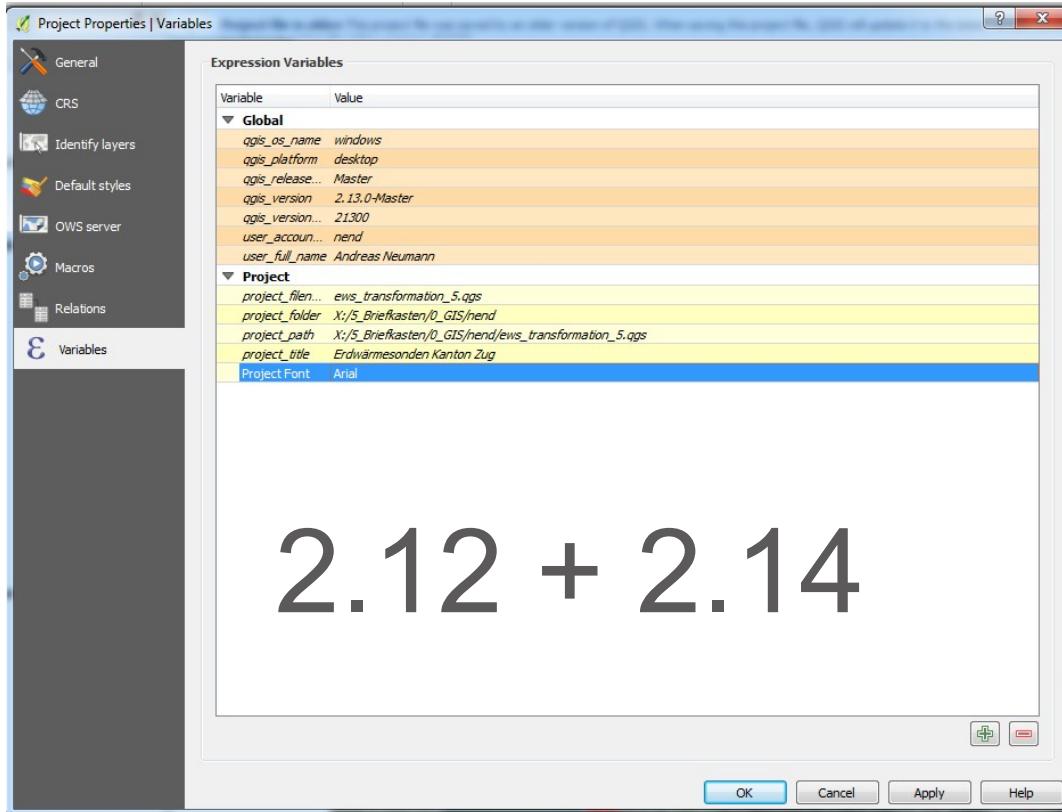
PKI authentication with keys

Available for different providers, e.g.:

- Postgis
- WMS
- WFS

2.12 + 2.14

Variables



Can be defined:

- globally
- on project
- on layer
- in print composer

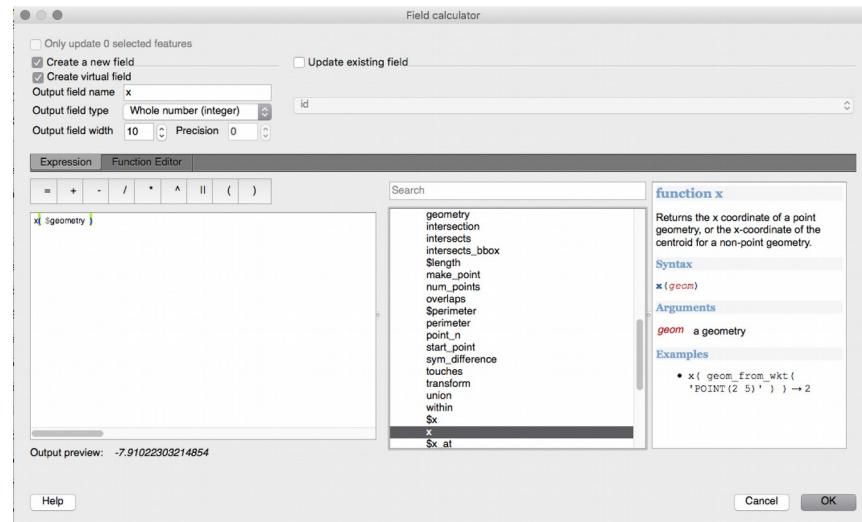
Different scopes with inheritance

Automatic variables (like QGIS version, OS, User, Project file path) or custom user defined variables

New in version 2.14: @qgis_os_name [Linux|Windows|OSX], @qgis_platform [Desktop|Server], @user_account_name, @user_full_name, @geometry_part_count, @geometry_part_num, @map_extent_width, @map_extent_height, @map_extent_center

New expression functions

- num_points(geom)
- area(geom)
- length(geom)
- perimeter(geom)
- start_point(geom)
- end_point(geom)
- point_n(geom,n)
- make_point(x,y)
- x(geom)
- y(geom)



- project_color
- color_part (e.g. red, hue, aplpha)
- set_color_part
- day_of_week

2.12

New expression functions

- relate (DE-9IM)
- m/z additions for many functions
- reverse (linestring)
- eval(function)
- translate
- darker|lighter
- radians|degrees
- point_on_surface
- exterior_ring
- is_closed
- geometry_n
- num_geometries
- num_rings
- num_interior
- nodes_to_points
- segments_to_lines
- closest_point
- shortest_line

New expression functions

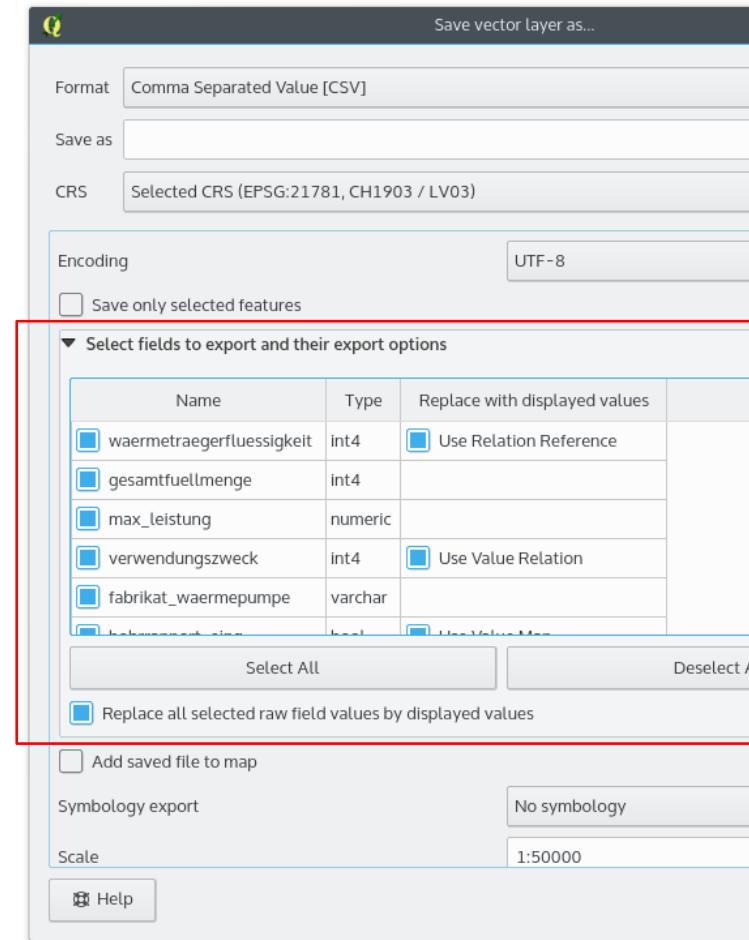
- aggregate (with filter/group by)
- relation_aggregate (for related features in other tables)
- Improved date/time calculations

GDAL/OGR 2.x in QGIS Windows

- Better Geopackage support
- Support for curves in more data providers (e.g. Geopackage, GML, Interlis, Postgis)
- Support for reading and writing spreadsheet files (Libreoffice and Excel)
- more options for GDAL/OGR based Processing providers or format translations

Export of Display Values in Save As

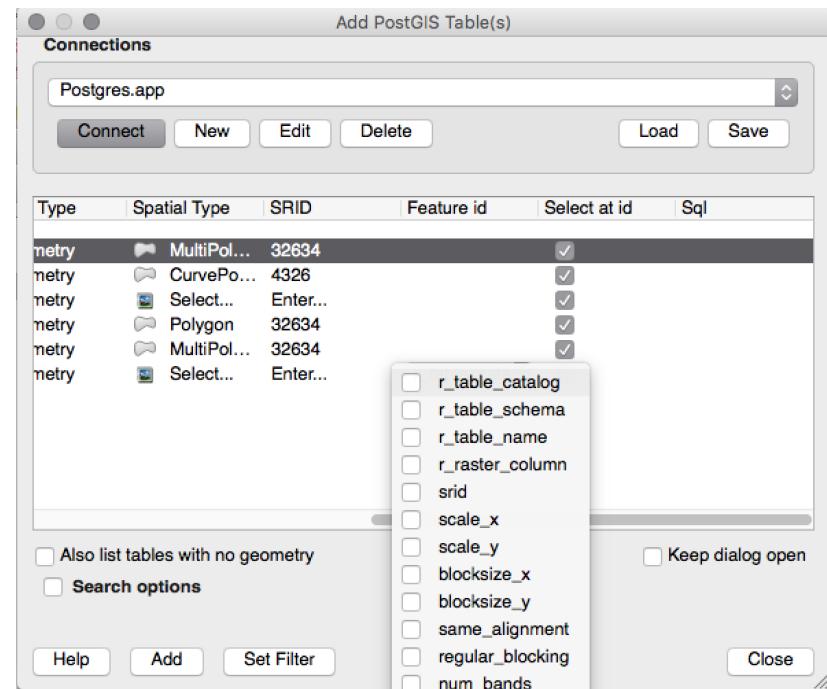
- Export of human-readable values instead of internal representation or codes
- For certain widgets
 - Date/Time
 - Value Relation
 - Relation Reference Widget
 - Boolean
- Default for Spreadsheet and CSV export



2.16

Postgis Provider

- Performance improvements for rule-based renderer
- Support for compound primary keys on tables/views
- Timestamp data type support (2.14)
- Transaction groups for editing (2.14 / 2.16)
- PKI auth support (2.14)



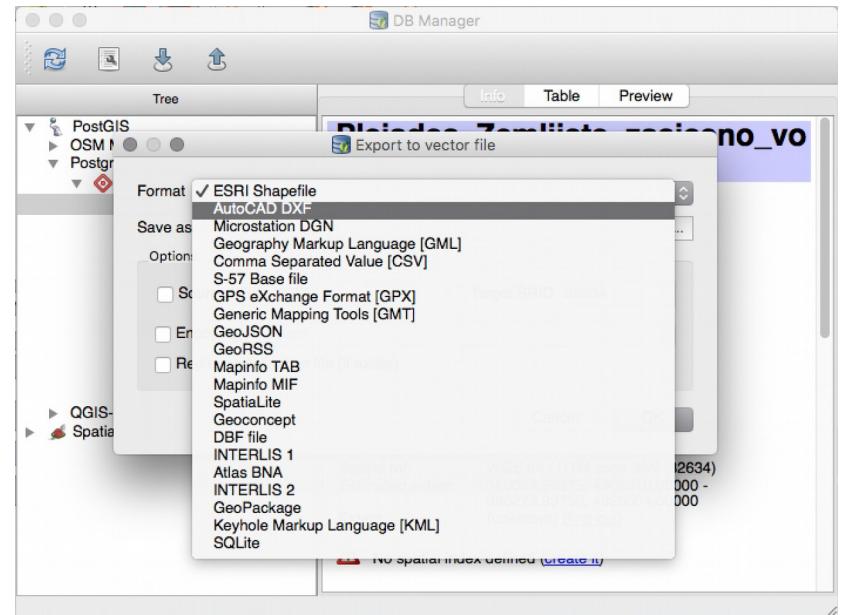
2.12 - 2.16

WFS Client

- Version auto-detection
- Implements WFS 1.0, 1.1 and 2.0
- Local cache in SpatiaLite
- Background download and progressive rendering
- URI parameter with sql with SELECT / FROM / JOIN / WHERE / ORDER BY clauses
- WFS 2.0 joins
- “Only request features overlapping the view extent” setting by default
- Many behind the scenes improvements / tests

DB-Manager

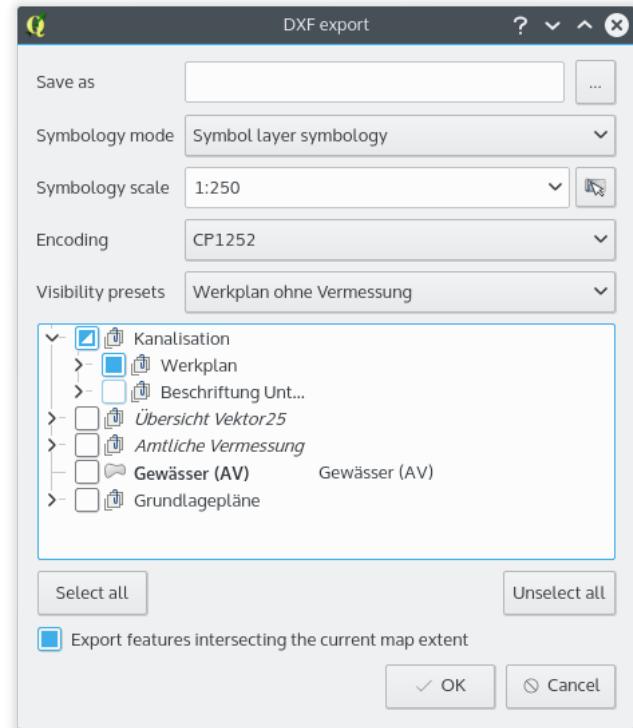
- Export to OGR supported formats
- Support Oracle connections
- Import only selected features
- Query windows as tabs (good for multiple SQL queries)



2.12

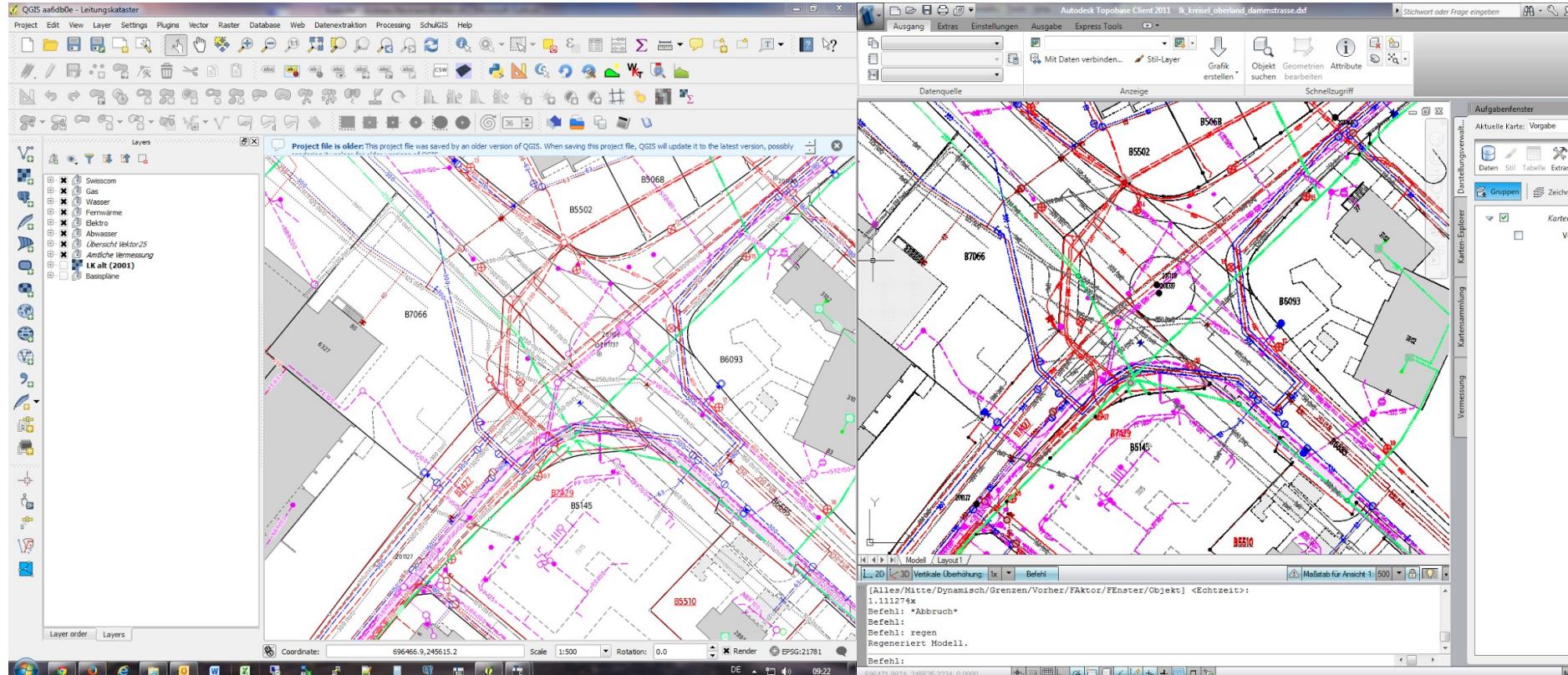
DXF Export Improvements

- Export with our without symbology
- Export everything or visible extent
- Set scale for rendering rules and filters
- Use QGIS layer names, layer title or layer attribute to determine layer name
- Support of visibility presets
- Support multiline text
- Support solid fills
- Support transparency
- Support line offsets and units properly
- Automatic conversion of simple and SVG symbols to DXF blocks



2.8 - 2.14

DXF Export Improvements



2.8 - 2.14

New geometry model

Circular Arcs, 3D, M-Values

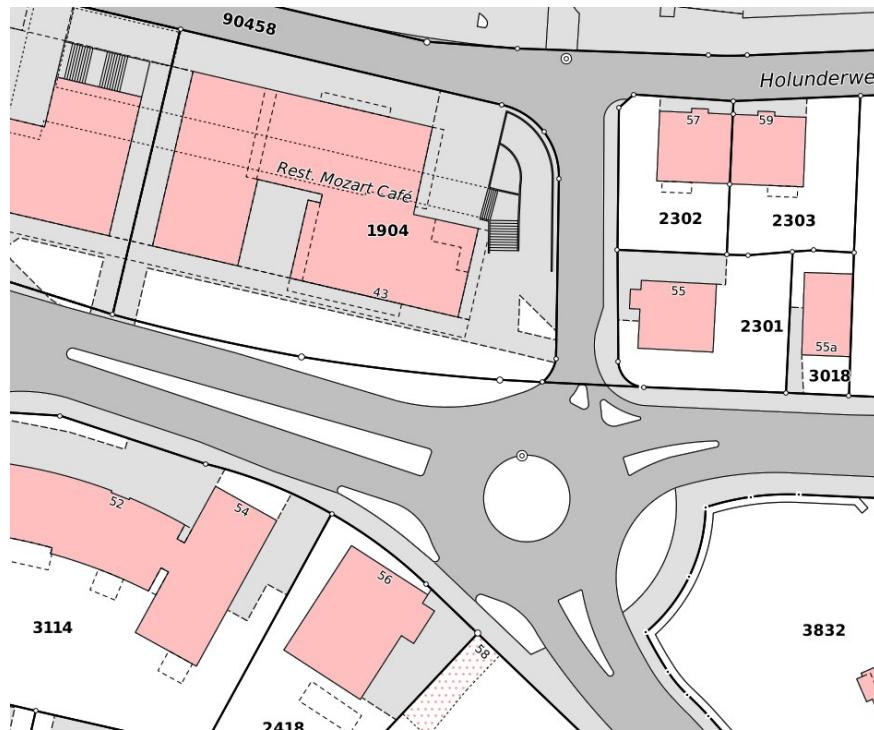
2.10: possibility to display features with curved type

2.12: editing of curved geometry types, z/m-values

2.14: curve support in WKT and GML

2.16: Curve support in Geopackage (through OGR)

3.x: ????



2.10 - 2.16

Conditional formatting in attribute table

Attribute table - TA Lower Shire :: Features total: 30, filtered: 30, selected: 0

VIE1_	NAME2_	NAME3_	Area	Code	Total	Male	Female	area_km2	dense_km2
0	Balaka	South	TA Msamala	AFRMW 31201	172286.0000...	82743.00000...	89543.00000...	1379.16460	125
1	Balaka	South	TA Kalembo	AFRMW 31204	122305.0000...	58151.00000...	64154.00000...	745.71926	164
2	Zomba	South	TA Mlumbe	AFRMW 30306	132340.0000...	62539.00000...	69801.00000...	668.51746	198
3	Chikhwawa	South	Lengwe Nat...	AFRMW 31008	53.00000000...	34.00000000...	19.00000000...	928.19352	0
4	Gam...	Chikhwawa	Majete Gam...	AFRMW 31009	0.0000000000...	0.0000000000...	0.0000000000...	646.31668	0
5	Ndamera	South	TA Ndamera	AFRMW 31101	26596.00000...	12671.00000...	13925.00000...	188.70402	141
6	Boma	South	Nsanje Boma	AFRMW 31120	20179.00000...	10051.00000...	10128.00000...	15.70644	1285
7	Chimombo	South	TA Chimombo	AFRMW 31102	10239.00000...	4898.00000...	5341.00000...	35.62549	287
8	Nyachik...	South	TA Nyachik...	AFRMW 31103	3640.00000...	1772.00000...	1868.00000...	78.06751	47
9	Io	South	TA Miolo	AFRMW 31104	57937.00000...	27743.00000...	30194.00000...	343.18648	169
10	Tengani	South	TA Tengani	AFRMW 31105	34690.00000...	16953.00000...	17737.00000...	347.31809	100
11	Benje	South	TA Mbenje	AFRMW 31106	43394.00000...	21330.00000...	22064.00000...	318.15937	136
12	Malemia	South	TA Malemia	AFRMW 31107	18033.00000...	8746.00000...	9287.00000...	144.01756	125
13	Ngabu	South	TA Ngabu	AFRMW 31108	11146.00000...	5365.00000...	5781.00000...	59.03138	189
14	Mlauli	South	TA Mlauli	AFRMW 31302	24775.00000...	12059.00000...	12716.00000...	562.80138	44
15	Symon	South	TA Symon	AFRMW 31303	38179.00000...	18671.00000...	19508.00000...	416.56050	92
16	Gamb...	Neno	Majete Gam...	AFRMW 31305	36.00000000...	19.00000000...	17.00000000...	58.38459	1
17	Sitola	South	TA Sitola	AFRMW 30202	30611.00000...	18015.00000...	20596.00000...	327.15124	118
18	Liwonde Tow...	South	Liwonde Tow...	AFRMW 30222	22927.00000...	11035.00000...	11892.00000...	36.18189	634
19	Chikhwawa B...	South	Chikhwawa B...	AFRMW 31020	6987.00000...	3786.00000...	3201.00000...	8.41015	831
20	Ngabu	South	TA Ngabu	AFRMW 31001	149490.0000...	74222.00000...	75268.00000...	1085.64258	138
21	Lundu	South	TA Lundu	AFRMW 31002	46372.00000...	24473.00000...	21899.00000...	199.50341	232
22	Chapana...	South	TA Chapana...	AFRMW 31003	86495.00000...	41985.00000...	44510.00000...	836.06846	103
23	Maseya	South	TA Maseya	AFRMW 31004	26639.00000...	13323.00000...	13316.00000...	145.34759	183
24	Katunga	South	TA Katunga	AFRMW 31005	24680.00000...	11960.00000...	12720.00000...	161.29650	153

Show All Features ▾

Conditional Format Rules

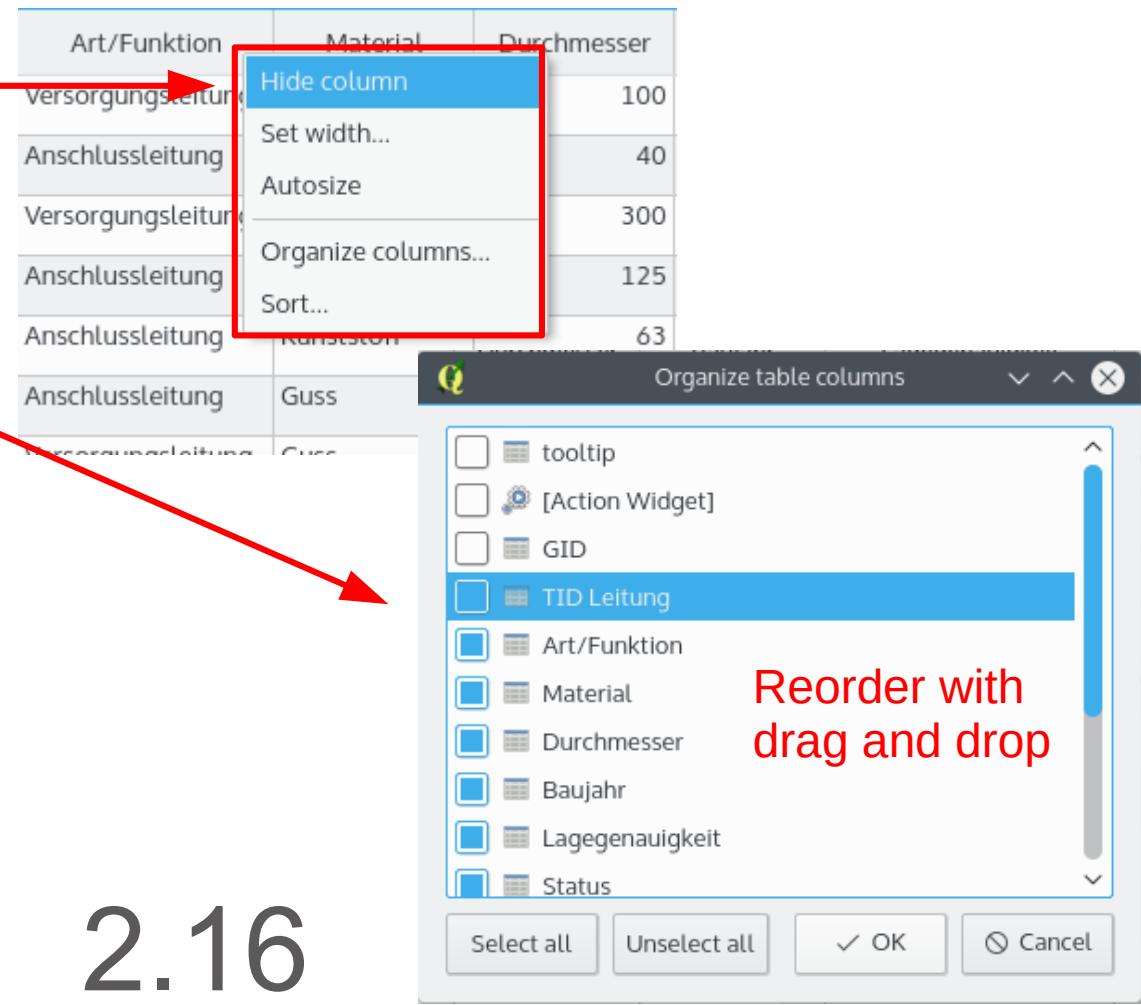
Name: Smaller ares
Condition: "Female" < 10000
Preset: abc - 123
Background: Red
Text: Black
Icon: None
Font: Helvetica

Done Cancel Delete

2.12

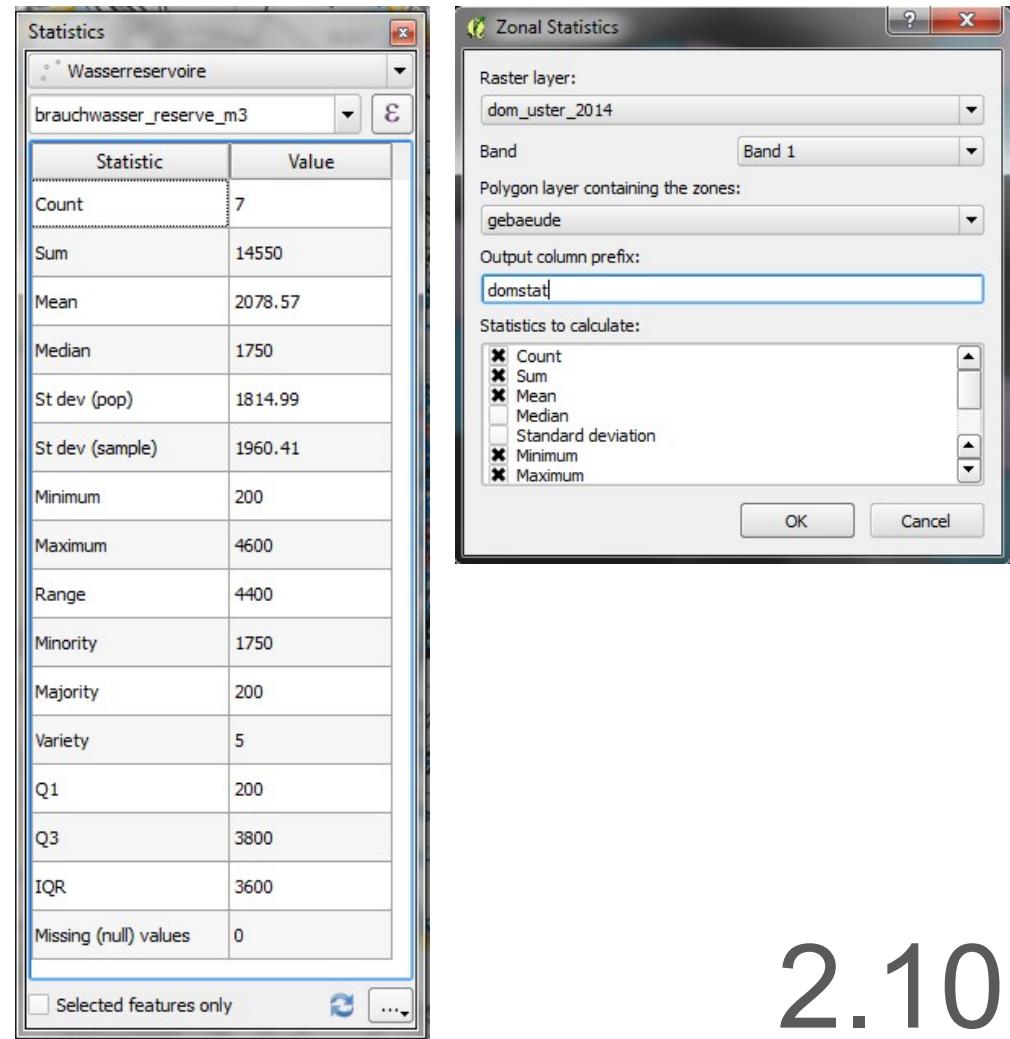
Attribute table improvements

- Context menus for columns, rows and cells
- Reorder columns
- Hide specific columns
- Sort based on expressions and multiple columns
- New action columns



Statistics Summary Panel

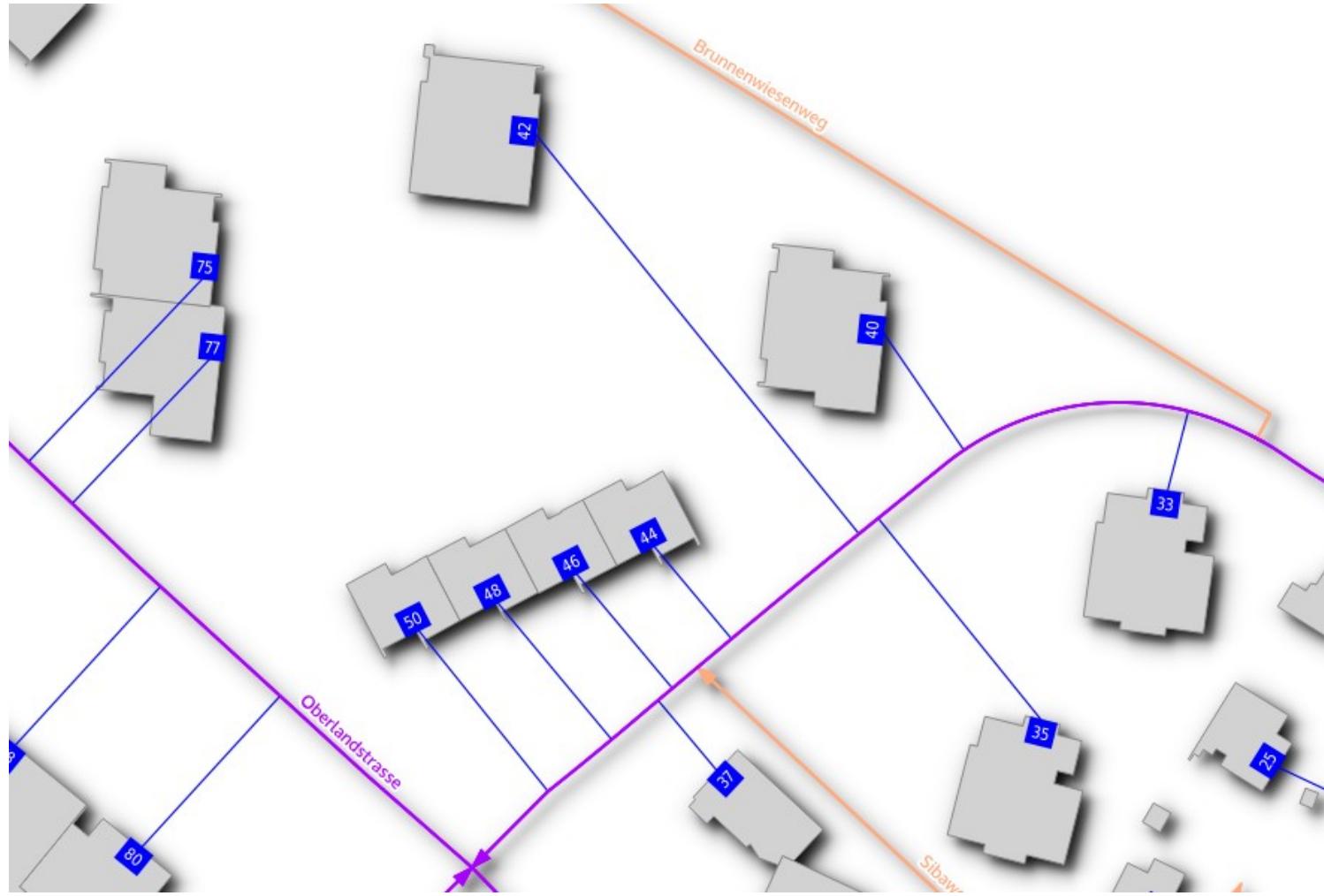
- Various statistical parameters for all or selected features of a layer
- Total count and count of NULL values
- Improved zonal stats plugin - to generate raster/vector overlay statistics



Live Layer Effects

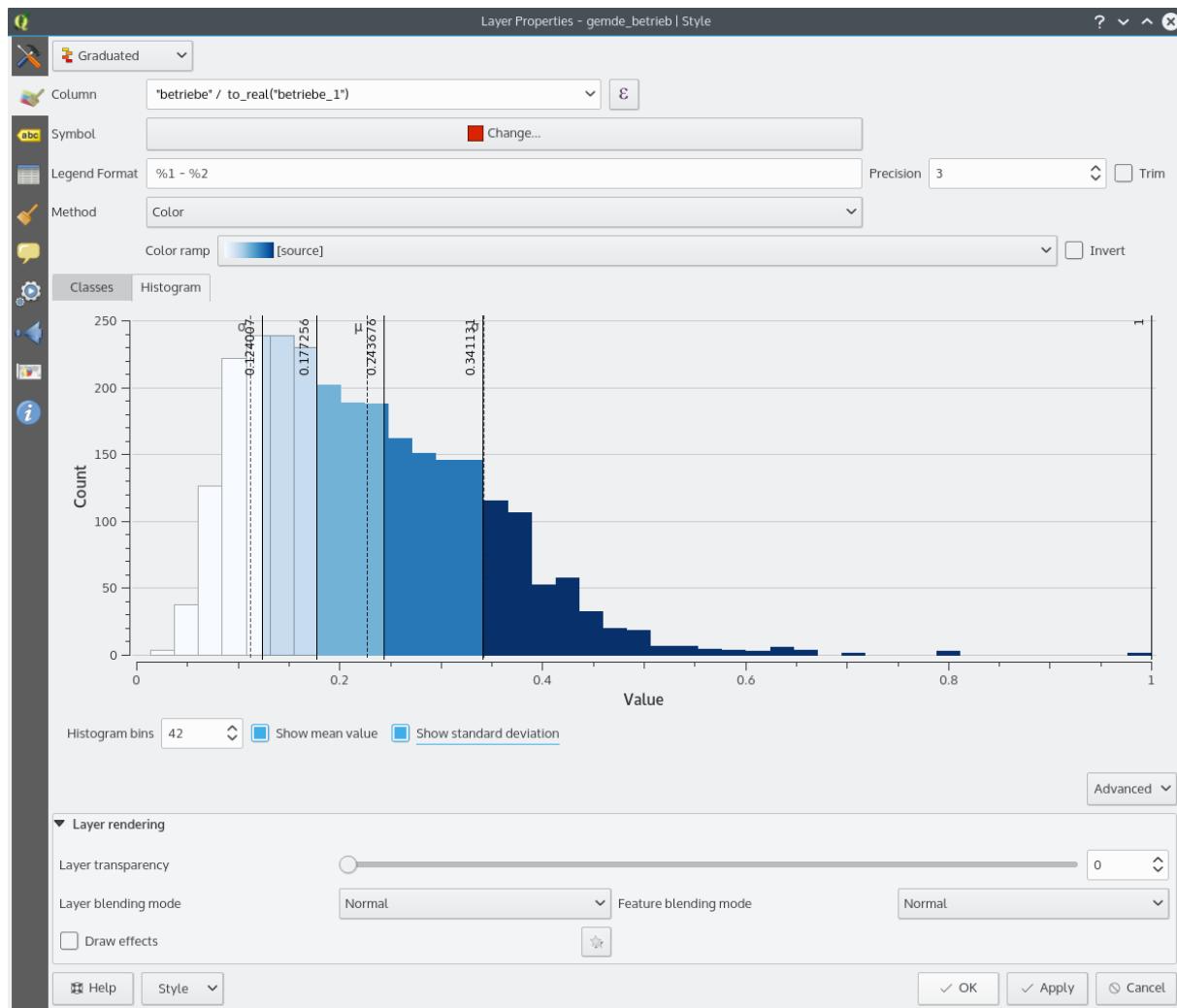
- Applies to all vector geometries of a layer
- Chainable combination of
 - Source
 - Transform
 - Blur
 - Drop Shadow / Inner Shadow
 - Inner glow / Outer glow
 - Colorize
- Combine with transparency and blend modes

Live Layer Effects



2.10

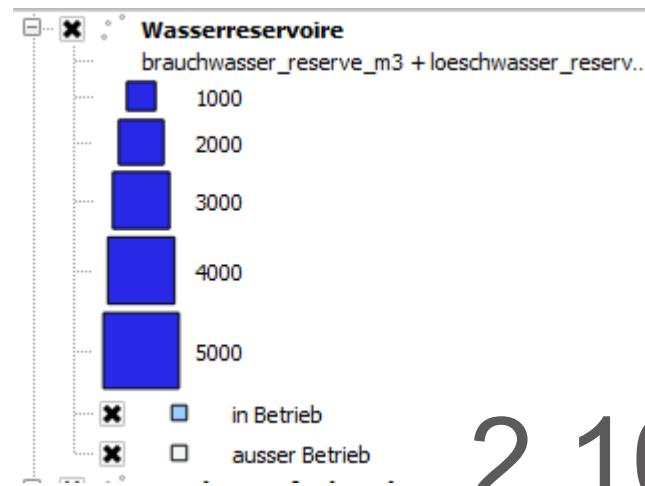
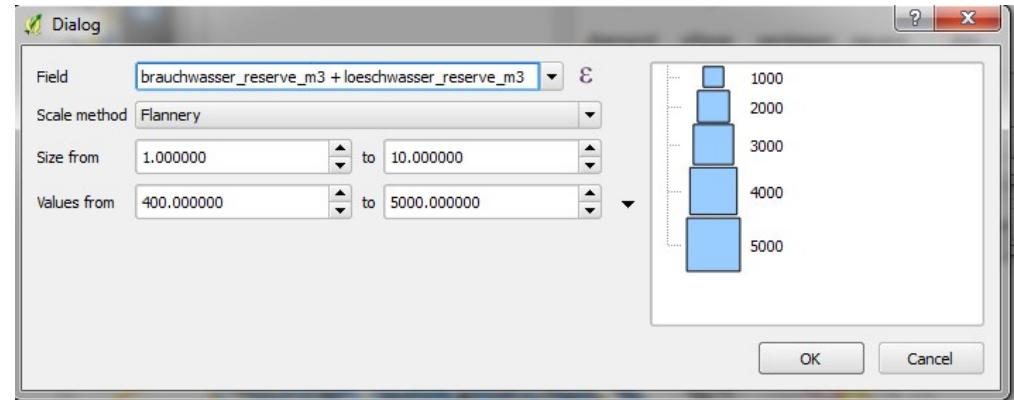
Graduated Renderer Histogram



2.10

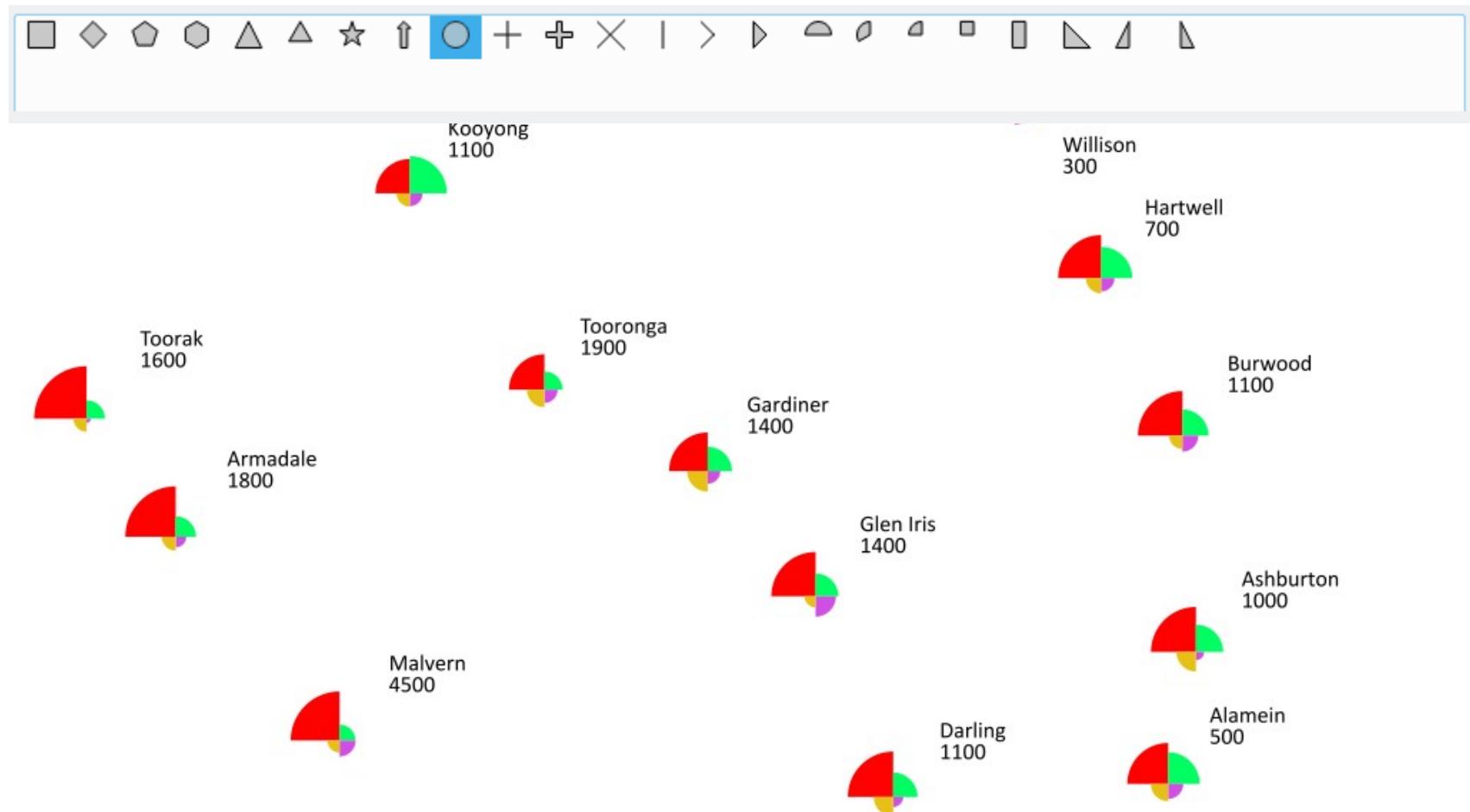
Scaled symbols improvements

- Assistant for different scaling modes and mapping min/max to actual sizes
- Legend in legend tree and print composer
- Legend for components of diagrams (without size)



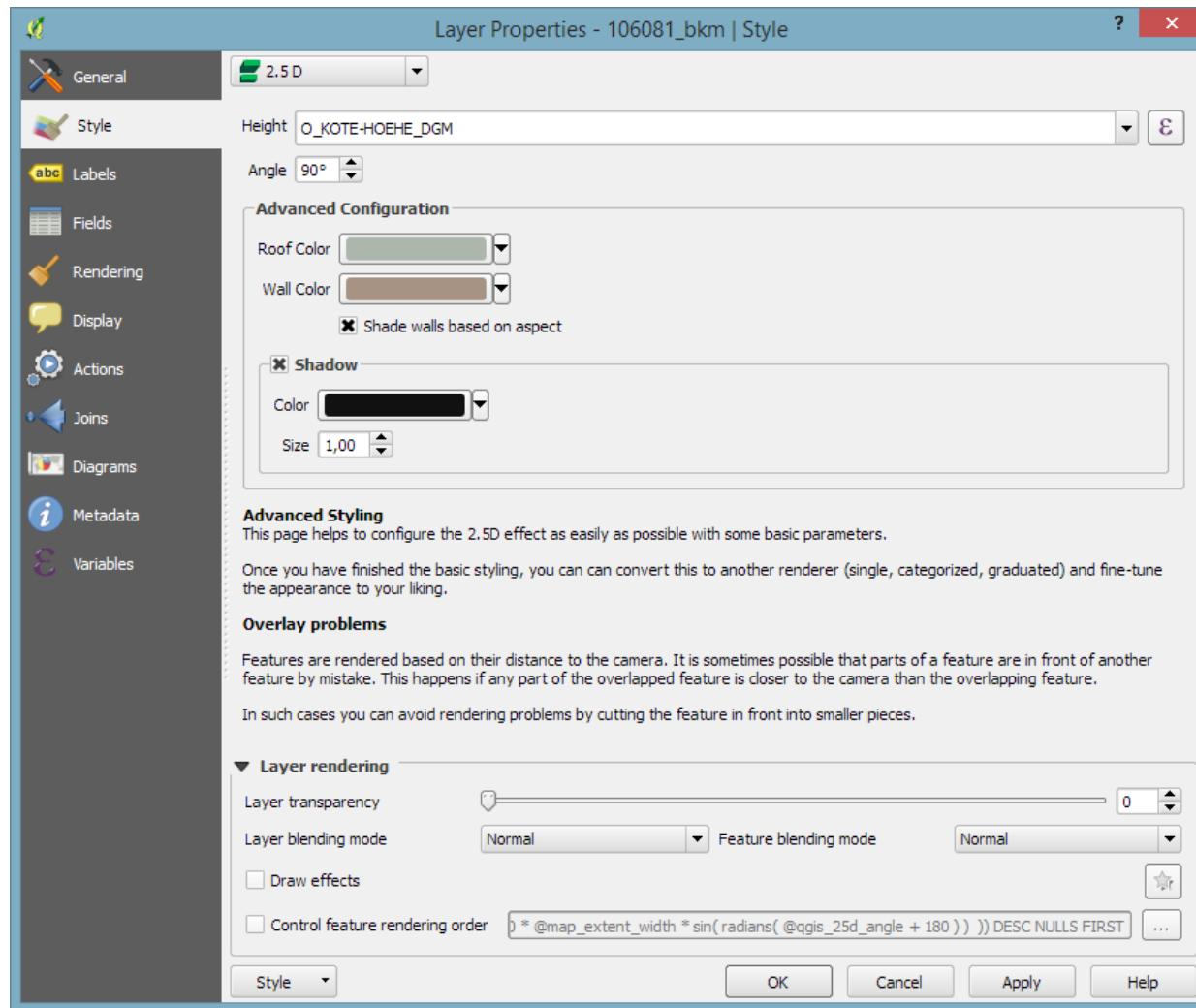
2.10+2.14

Size Assistant / New simple markers



2.10-2.16

2.5D Rendering



2.14

2.5D Rendering

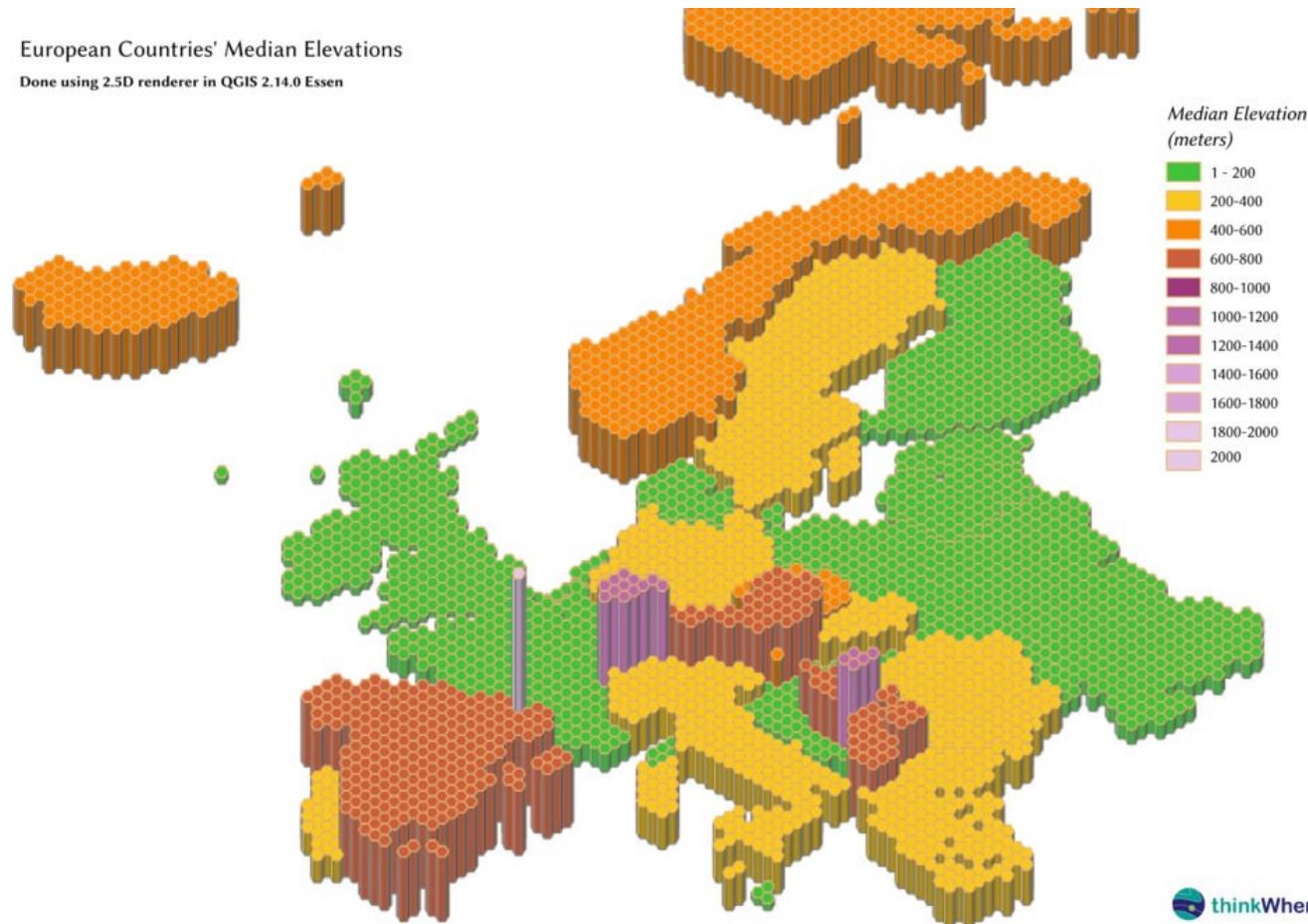


2.14

2.5D Rendering

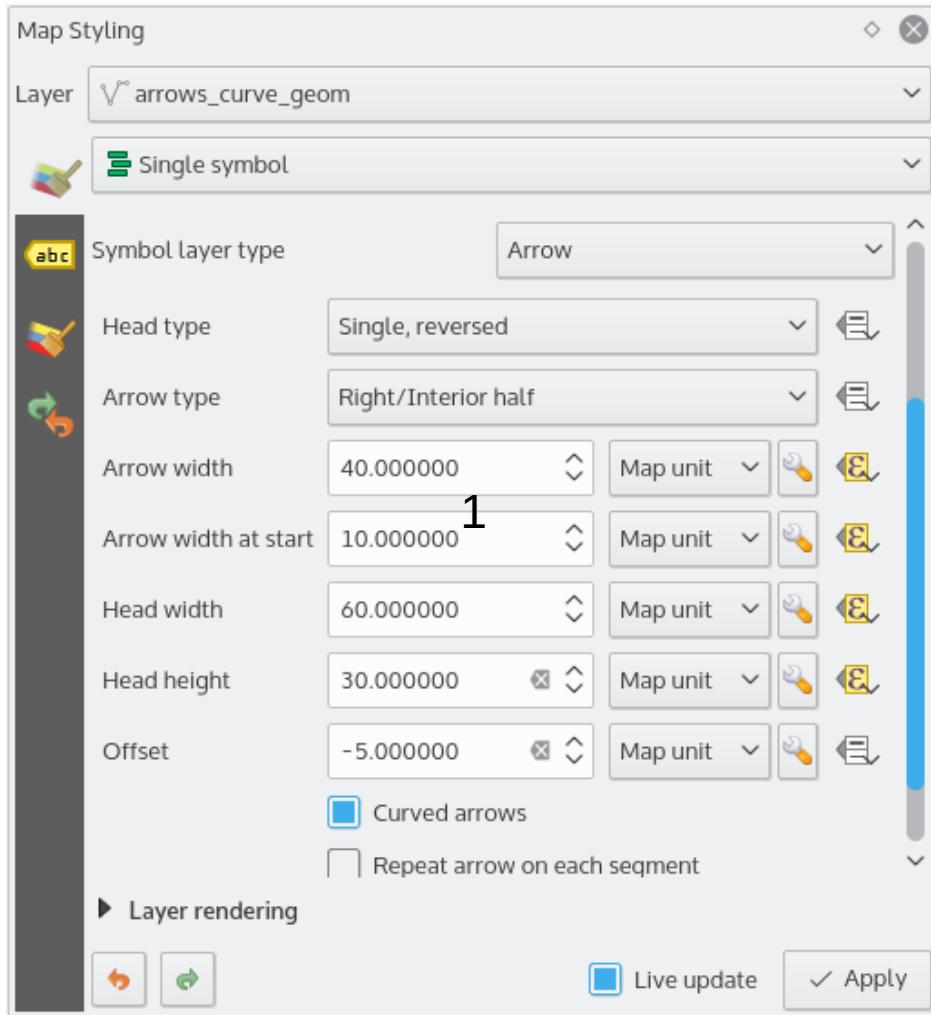
European Countries' Median Elevations

Done using 2.5D renderer in QGIS 2.14.0 Essen



2.14

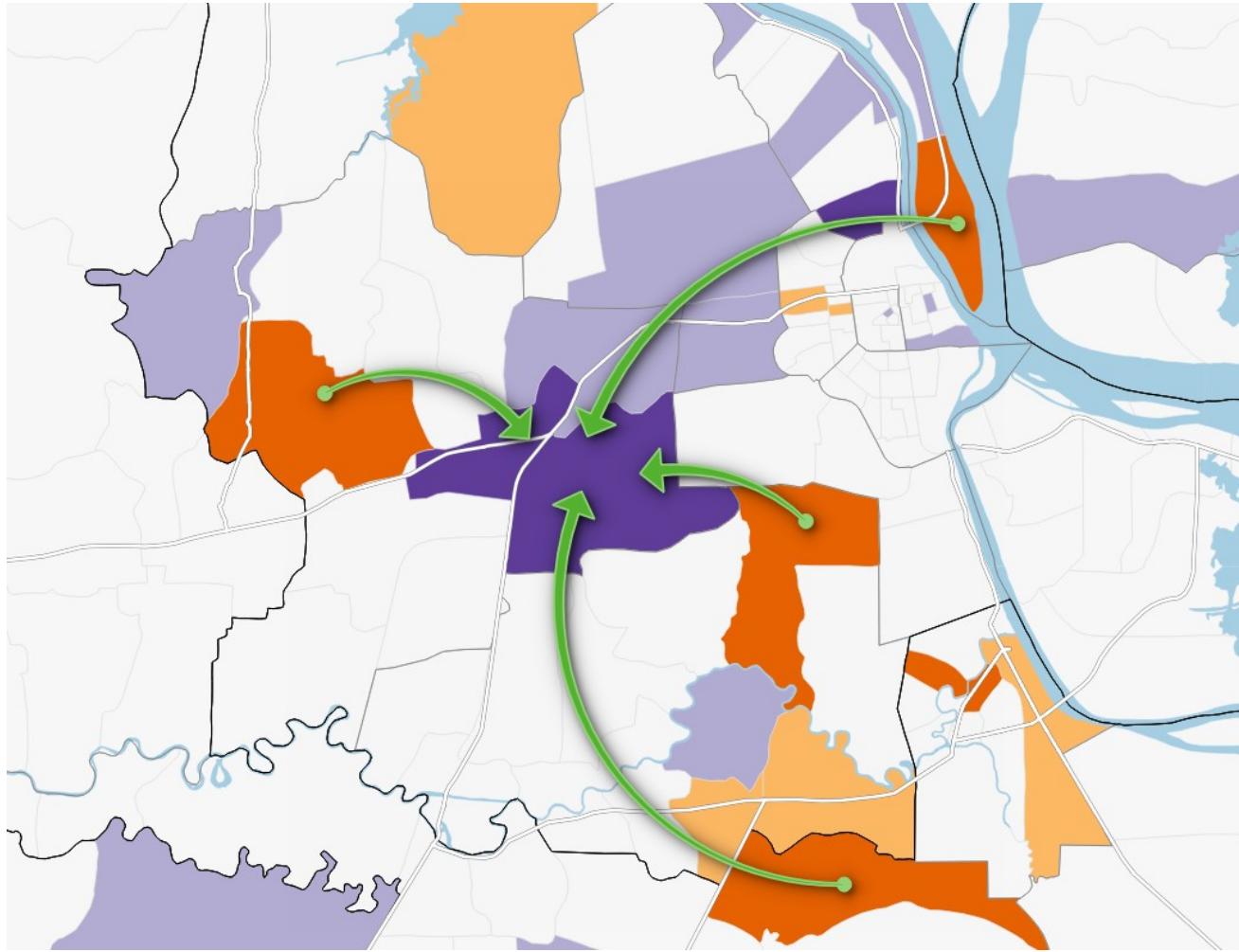
Curved Arrow Renderer



- Geometry:
 - 3 points (lines)
 - or circular arcs
- Head types:
 - single
 - single, reversed
 - double
- Arrow types:
 - plain
 - left / interior half
 - right / exterior half
- Head: separate width/height
- Offsets for arrow

2.16

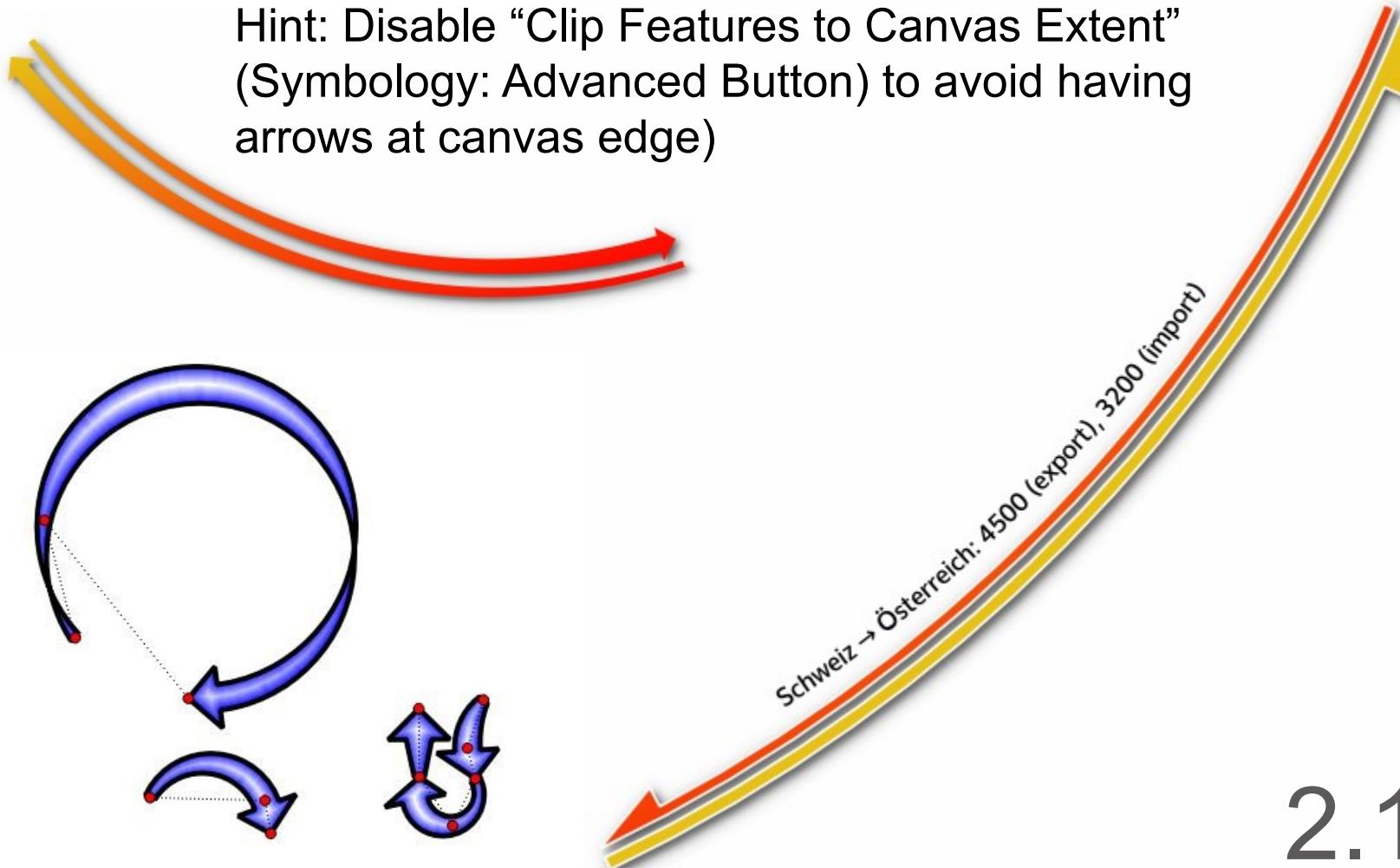
Curved Arrow Renderer



2.16

Curved Arrow Renderer

Hint: Disable “Clip Features to Canvas Extent”
(Symbology: Advanced Button) to avoid having
arrows at canvas edge)



Live Hillshade Renderer

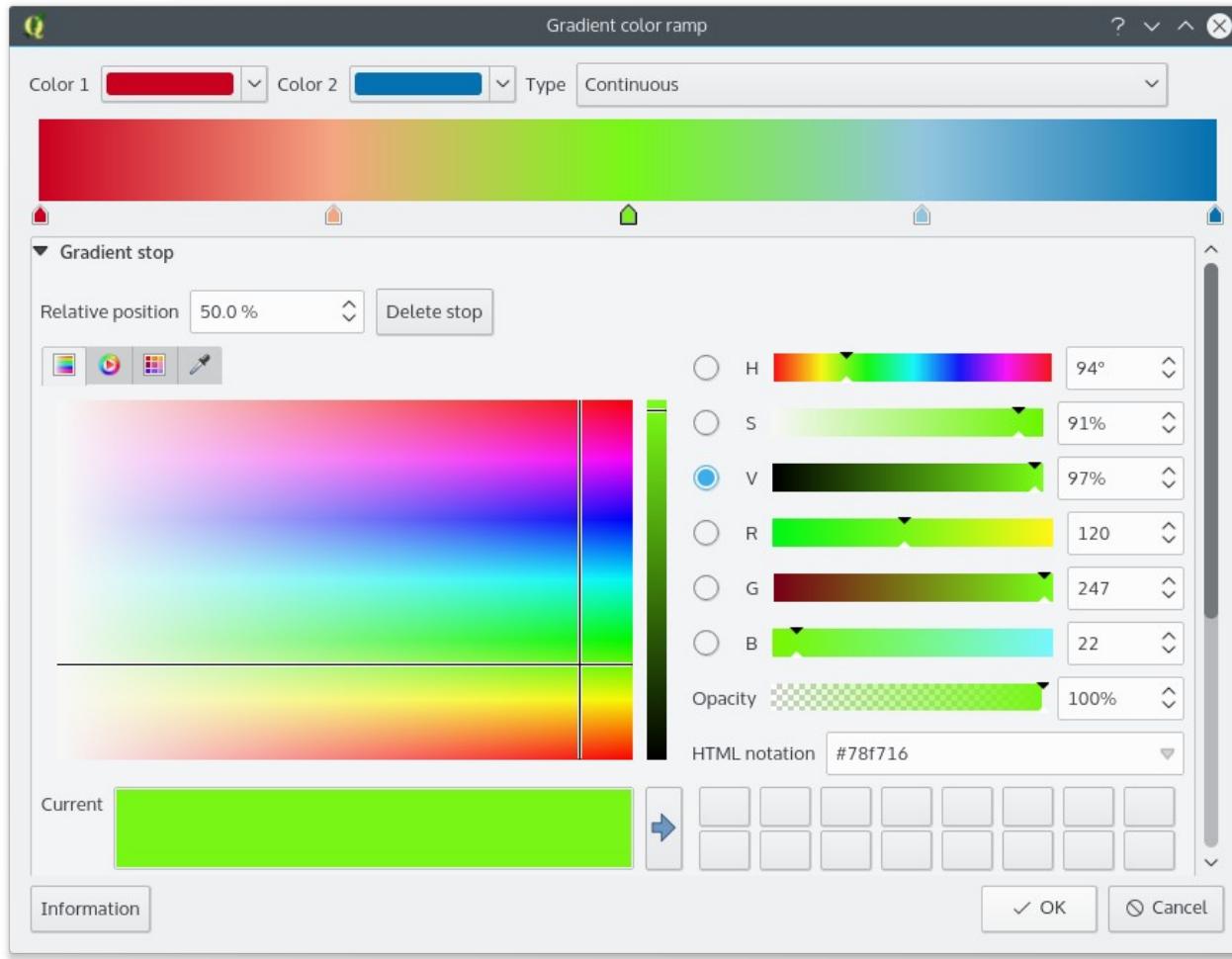
The image displays a map application interface. On the left, a grayscale hillshade rendering of a town is shown, with buildings and terrain shaded to indicate elevation. On the right, a "Map Styling" panel is open, containing the following settings:

- Layer:** dom_uster_2014
- Hillshade renderer:** Band 1 (Gray)
- Band:** Band 1 (Gray)
- Altitude (degrees):** 45.00
- Azimuth (degrees):** 315.00
- Z Factor:** 1.00000000
- Multidirectional:**
- Blending mode:** Normal
- Brightness:** 0
- Saturation:** 0
- Contrast:** 0
- Live update:**
- Apply:**

On the fly hillshade rendering of
DTM or DOM models

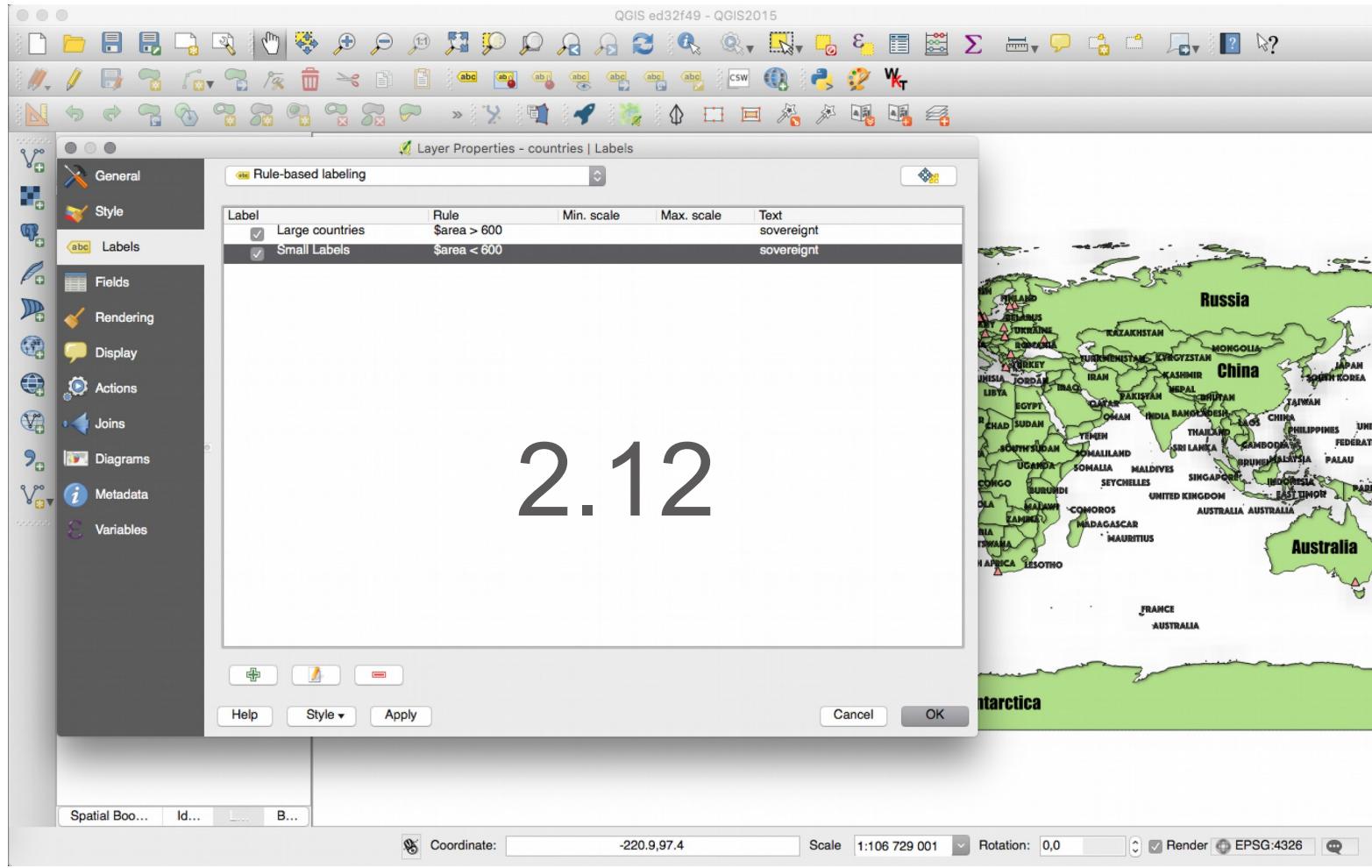
2.16

New Interactive Gradient Editor



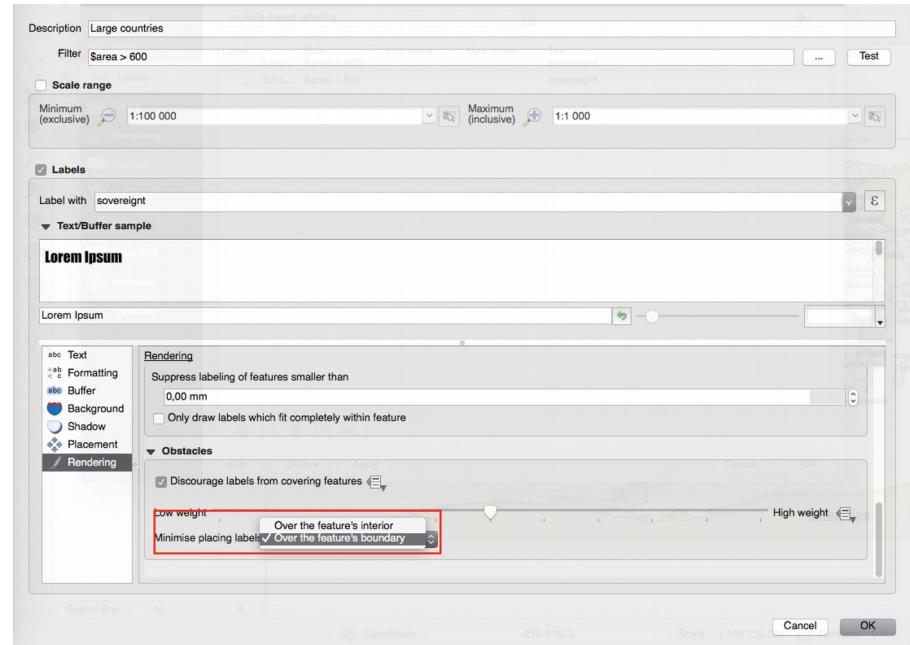
2.16

Rule-based labels



Label Improvements

- Data-defined Quadrant for point labels
- Draw only labels in polygons, if label fits
- Control priority of label obstacles
- avoid polygon borders (obstacles)
- obstacle only layers

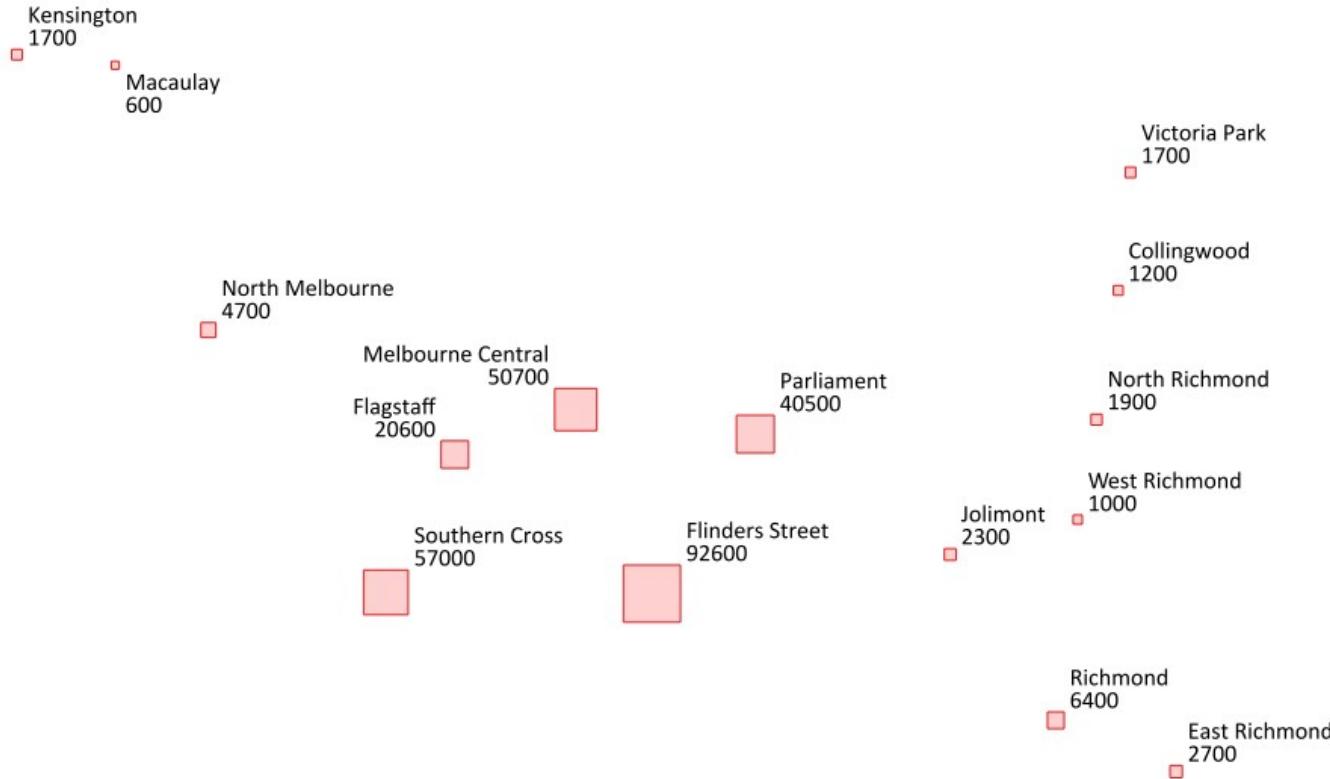


2.12

Label Improvements

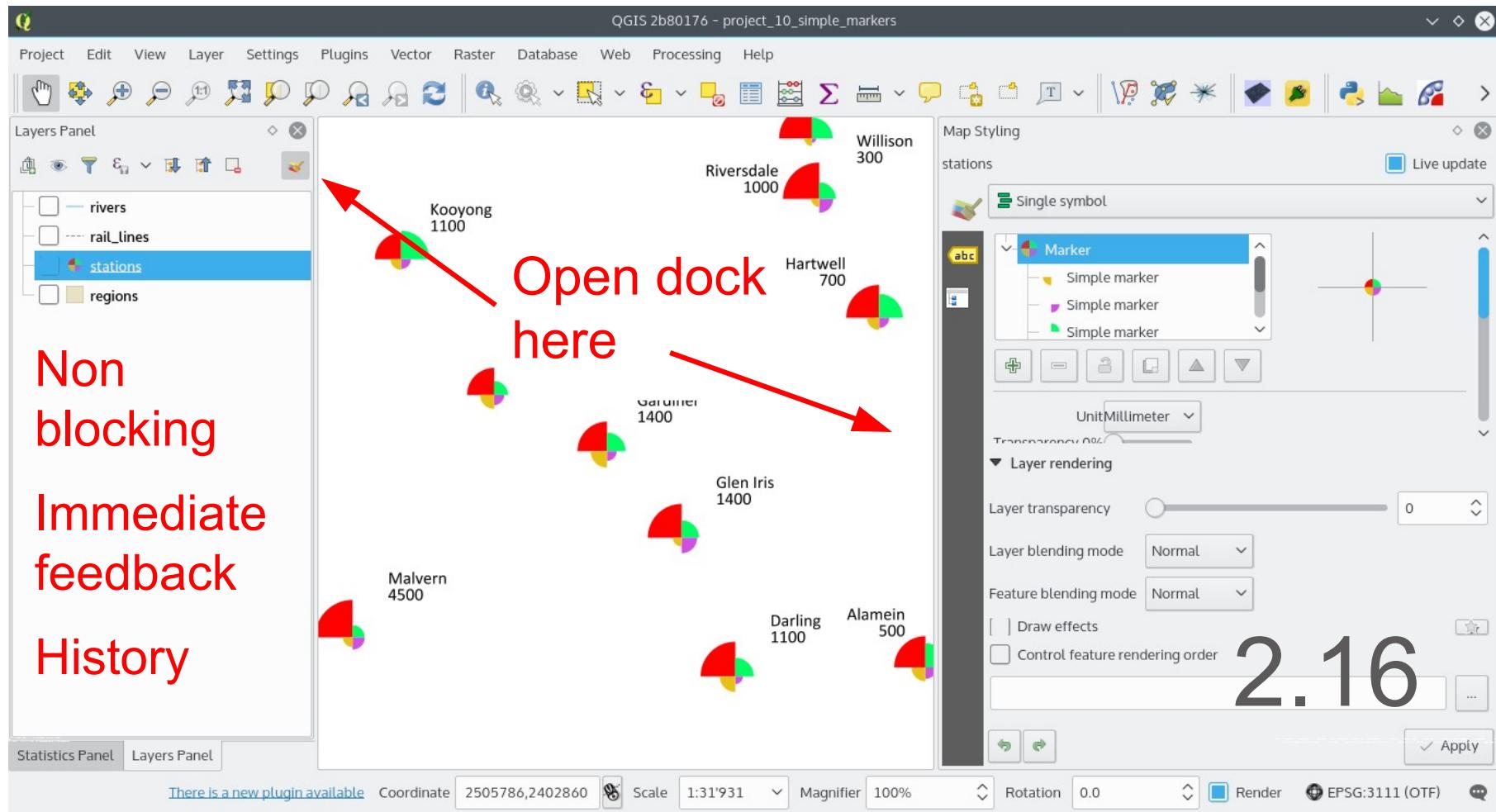
- Control label rendering order
- Point labeling according to Krygier/Wood (2011): use “cartographic” priorities for positioning: top right, top left, bottom right, bottom left, middle right, middle left, top (slightly right), bottom (slightly left)
- Consider actual rendered symbol size for labeling point features
 - apply rendered size to label distance - only available for “cartographic” positioning
 - consider symbol bounding box as obstacle

Label Improvements



Consider actual rendered symbol size
for automatic labeling offsets of point features

Map Styling and Labeling Dock



Editing

- Autotrace digitizing function improved and in QGIS core (2.14) – press “t” while digitizing. See <http://www.lutraconsulting.co.uk/products/autotrace/Trac eDigitising> for details with videos
- Extend linestring with reshape tool (2.16)
- Point Features: interactive editing of symbol offsets (2.16)

Widget Improvements

- Line edit with auto-completer for ValueRelation edit widget (2.10)
- Relation Reference Widget with Drilldown (2.10)
- Relative path support in file widget, photo widget and webview widget (2.12)
- External Resource Widget (for linking file and web ressources) (2.14)
- Client-side constraints on input widgets (2.16)
- Server-side default values (PostgreSQL) (2.16)

Multi-Attribute Search in Form View

- Start with CTRL-F or Button
- Select Features or Filter table
- Combine selection/filter rules from multiple fields
- Add or remove from selection or create new selection
- Filter with AND / OR
- Select search operator
 - equal/not equal to value
 - greater/lower than value
 - is/is not NULL

Multi-Attribute Search in Form View

Attribute table - pvanlagen :: Features total: 51, filtered: 51, selected: 5

Expression

- Stefan und Evelyn Haebler
- Franziska und Urs Altorfer
- Christian Früh
- Andreas Neumann
- Fam. Hasler und Kurt Walter
- Martin Bachmann
- Roger Gubler
- Karin und Christoph Reinhardt
- Dominik Hürlimann
- Hürlimann?
- Peter Rüttimann
- Gaby und Erwin Brändli
- Nannette und Martin Bratteler
- Marc Vollenweider
- Andreas Wegmann
- Michel Marti
- Felix Scheuner
- Hans Kaufmann
- alenergy invest AG
- Andreas Leutenegger
- Andreas Leutenegger

Strasse: Case Sensitive Exclude field

Hausnummer: Case sensitive Exclude field

PLZ: 8624 Equal to (=) Exclude field

Ort: Case sensitive Exclude field

Rechtswert: Exclude field

Hochwert: Exclude field

Fläche: 5 Equal to (=) Exclude field

Leistung: 10 Equal to (=) Exclude field

Datum Inbetriebnahme: Greater than (>) Less than (<)

Kontakt: Case sensitive Greater than or equal to (>=) Less than or equal to (<=)

Installationsfirma: Case sensitive Is missing (null) Is not missing (null)

Bemerkung: Case sensitive Select features

Reset form

Show All Features

2.16

Equal to (=)
Not equal to
Greater than (>)
Less than (<)
Greater than or equal to (>=)
Less than or equal to (<=)
Is missing (null)
Is not missing (null)

Multi-Attribute Editing of Selected Features

ews_anlage - Feature Attributes

Actions

Anlage Eigentümer Bohrfirma Geologe Heizungsplaner Weitere Planer

Eigenschaften

t_id	<input type="text"/>	Anlage-Nr.	<input type="text"/>
Max. Leistung [kW]	30	Gesamtfüllmenge [Ltr.]	<input type="text"/>
Wärmeträgerflüssigkeit	<input type="text"/>	Reset to original values	<input type="button" value="NULL"/>
Verwendungszweck	heizen	Fachkativ wärmepumpe	<input type="button" value=""/>

Sondengruppen

Adresse der Anlage

Adresse Anlage

Moosmattstrasse 1 - 7 , Cham

ewss_anlage_adresse

Adresse Anlage

t_id `nextval('ewss.t_ili2db_seq'::regclass)`

Gemeinde

OK Cancel

2.16

Credits

To all who paid for new features / bug fixing

QGIS-CH, QGIS-UK

SIGE, Uster, Morges, Vevey, Nyon, Pully

Kt. Solothurn, Kt. Glarus, Kt. Zug, Kt. Basel Stadt, Land Vorarlberg

DFAT/Inasafe

Alta ehf, GIS3W

Province Tuscany

Boundless, iTOpen, Sourcepole, Camptocamp, OpenGIS, Norbit, Lutra, etc.

To all who developed the new functionality

Stéphane Brunner, Paul Blottière, Alex Bruy, Nyall Dawson, Martin Dobias

Jürgen Fischer, Marco Hugentobler, Matthias Kuhn, Silvio Larosa

René Luc d'Hont, Sandro Mani, Hugo Mercier, Arnaud Morvan

Asger Petersen, Even Rouault, Denis Rouzaud, Sandro Santilli

Larry Shaffer, Nathan Woodrow

list is probably not complete ...