



QGIS 3 : plans, wishes and challenges

Hugo Mercier, FOSS4G 2016

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Who am I ?

- g C++/Python developer
 - g QGIS core developer
 - g PostGIS developer
- g <https://github.com/mhugo>
- g We are hiring:-)



g QGIS 3

- g Why ?
- g When ?
- g API changes
- g Migration « guides »
- g New features / Feature proposals



QGIS 3 – why ?

- g QGIS is not just a desktop application
 - g It's a platform with an API
 - g Lots of Python plugins in the field
- g Major version : keep the API stable
- g Backward compatibility in 2.x branch



QGIS 3 – why ?

- g API stability is good

- g ... but enforced at a high price when new features keep coming

- g New features ~= new concepts

- g The original API does not always fit well

- g « wrong » past choices

- g Introduce hacks

- g Hard to maintain and extend

- g Increase « Technical debt »



QGIS 3 – why ?

g Obsolescence

- g Qt4 => Qt5
 - g Qt4 is to be discontinued
- g Python 2 => 3
- g PyQt4 => PyQt5

g QGIS 3 :

- g Qt5
- g Python3 API



New possibilities

g Python 3

- g Better unicode support

g Qt5

- g Better OpenGL integration
- g Better mobile support
- g New Charts library
- g New webengine
 - g Not really yet ...



QGIS 3 – when ?

g 2.16

- g the « master » branch is forked to « master_2 »
- g the « master » branch is the root of the future « 3.0 »

g 3.0 expected Q1 2017

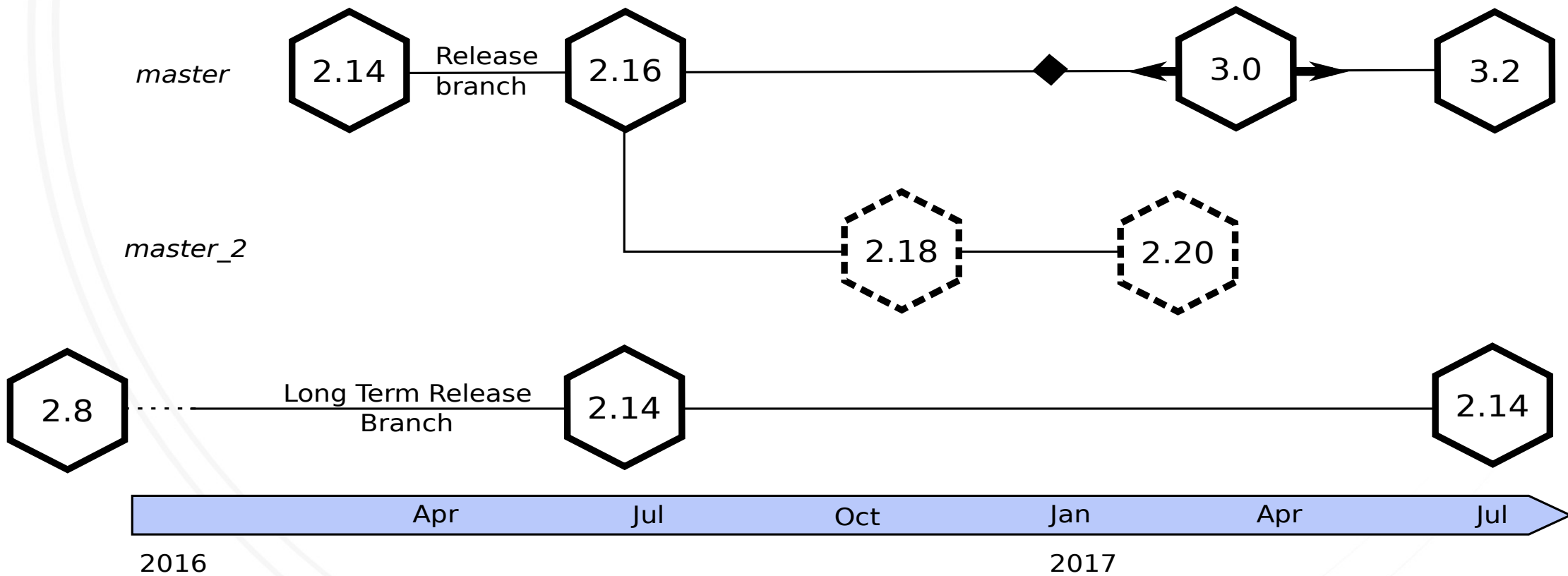
- g As a « beta »
- g Date adjustment in January 2017

g Current LTR (2.14) continued until 3.2

g 2.18 ?

- g Maybe, maybe not

QGIS 3 – when ?



g Refactoring effort

- g Cleanup
 - g More C++ good practices (const correctness)
 - g Get rid of old things (QgsLabel, ...)
- g Overall consistency and readability
 - g Class / method names : no more « V2 » suffix, capitalization
 - g Helps newcomers (as well as experienced ones)
- g Reduce complexity and « technical debt »



g Refactoring effort

- g Allow fixes that were not possible so far
 - g Because they would have broken the API
 - g **9-year old bug #777** : QgsFeature geometry accessor
- g Possible improvements
 - g C++11/14
 - g Multiple geometry columns
 - g Custom data providers in Python



g Status

Good, compilation OK, already useable

- g Each API change has big impacts, tests needed
- g Things still missing (some unit tests – pyspatialite ...)

g Documentation

- g Nice to have in QGIS 3
 - g https://github.com/qgis/qgis3.0_api/issues
- g API breaks
 - g http://qgis.org/api/api_break.html
 - g https://github.com/qgis/QGIS/blob/master/doc/api_break.dox

Migration guide

g Core :

- g 3.x (a.k.a master) branch first
- g No more Qt4
- g Backport to « master_2 » if you will

g Plugins :

- g No more Python 2



Migration guide : plugins

g Don't use « from PyQt4.QtCore import * »

g Use explicit lists of class imports

```
g from PyQt4.QtCore import (  
    g     QDate,  
    g     QTime,  
    g     QDateTime,  
    g     QVariant  
g )
```



g « 2to3 » script :

- g Convert a python file
- g From Python 2 to Python 3
- g From PyQt4 to PyQt5

g If you want to write a plugin for both Qt versions

- g « Wrapping » packages
 - g Qgis.PyQt will choose the right version

g Python is interpreted

- g write more unit tests !
- g test !



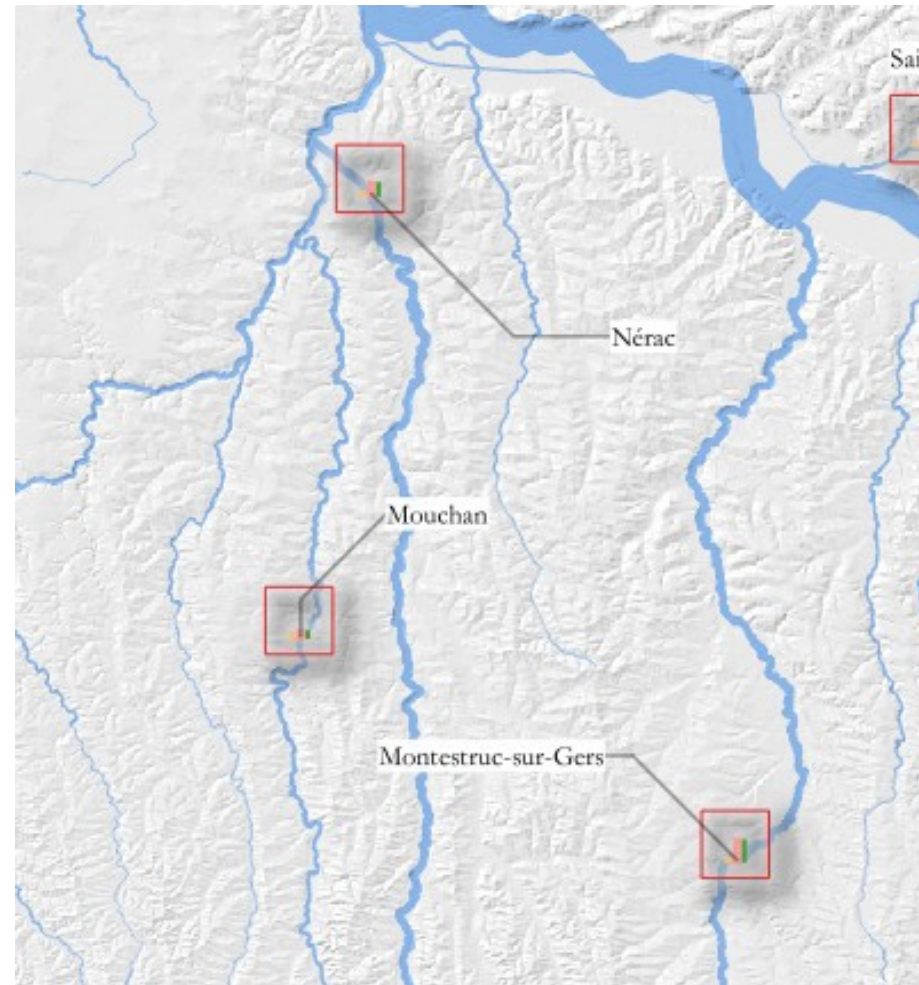
New features

g QEP 20 – auxiliary storage

- g Updateable joins
- g New project file format (zip) that can embed layers
- g Shortcuts to rapidly create « auxiliary fields » for a data-defined property
- g Primary target : transparent manual label placement

New features

QEP 28 – label connectors



New features

g Form / edit widgets

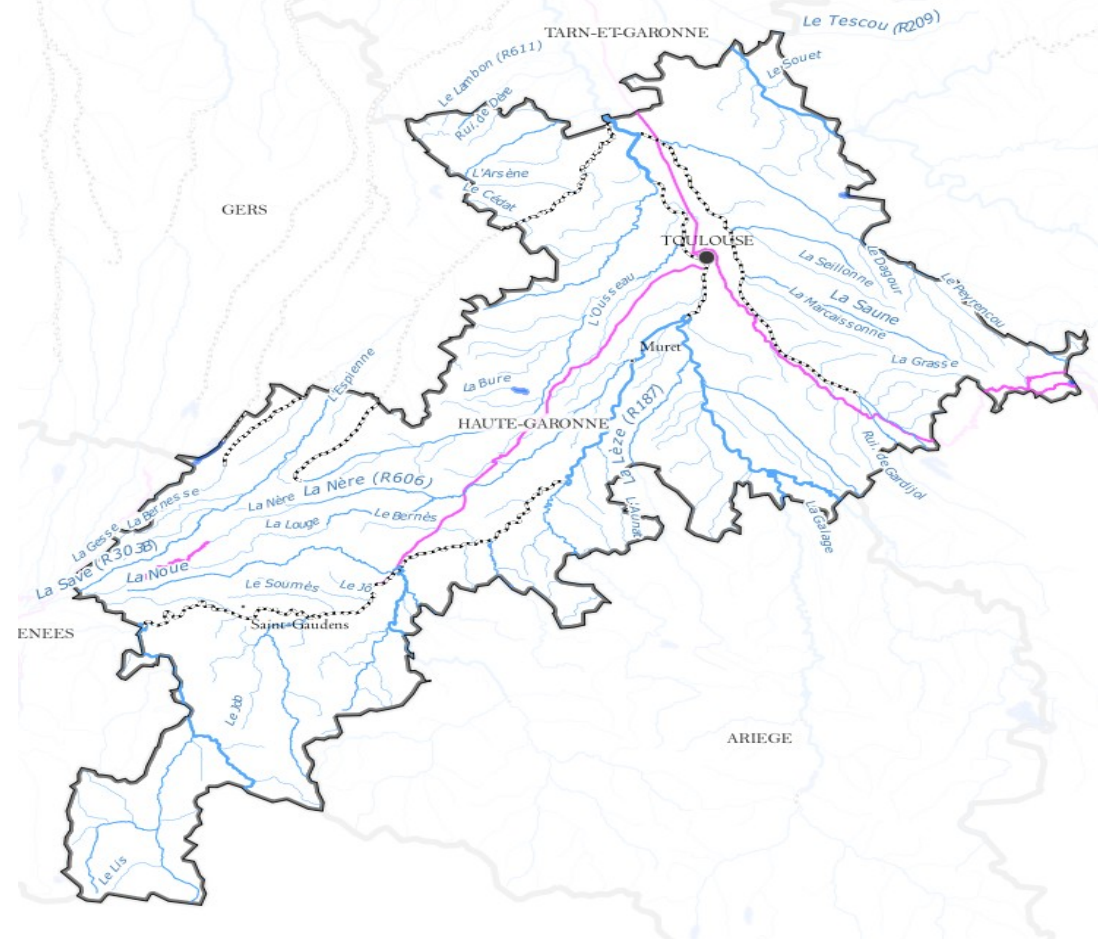
- g Custom widgets (registered by plugins) for some data types (C2C)
- g Support for array and dictionary types
- g Primary target : display and manipulation interlinked complex features (INSPIRE)

Feature proposals

g QEP 27 – label path

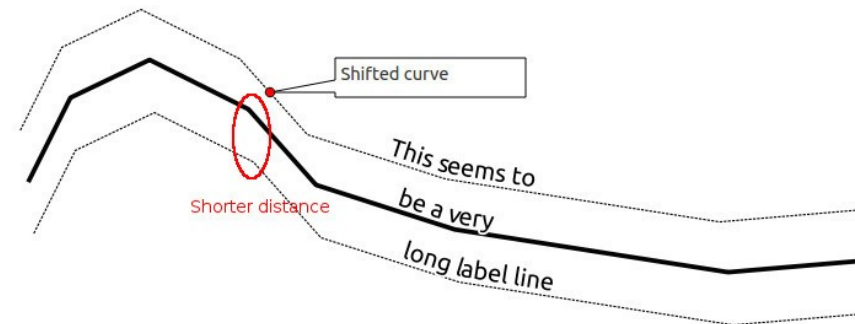
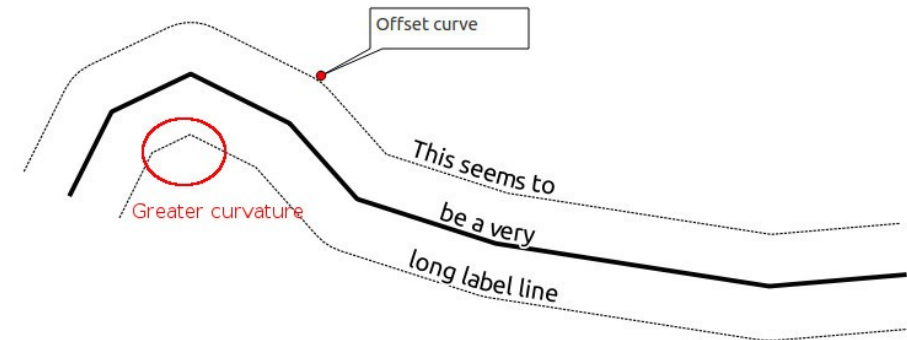
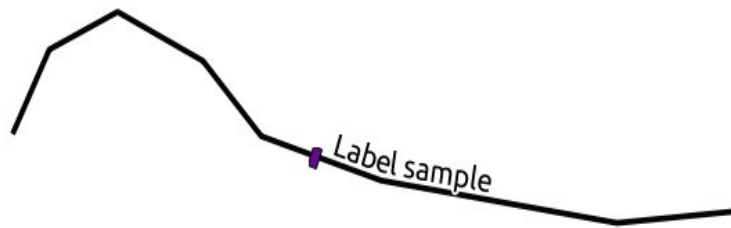
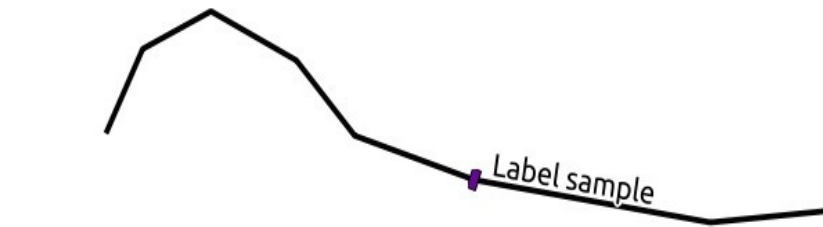
- g Curved labeling on a simplified / smooth version of the geometry

g QEP 30 – label mask



Feature proposals

9 QEP 41 – curved labels improvements



g Symbol clipping

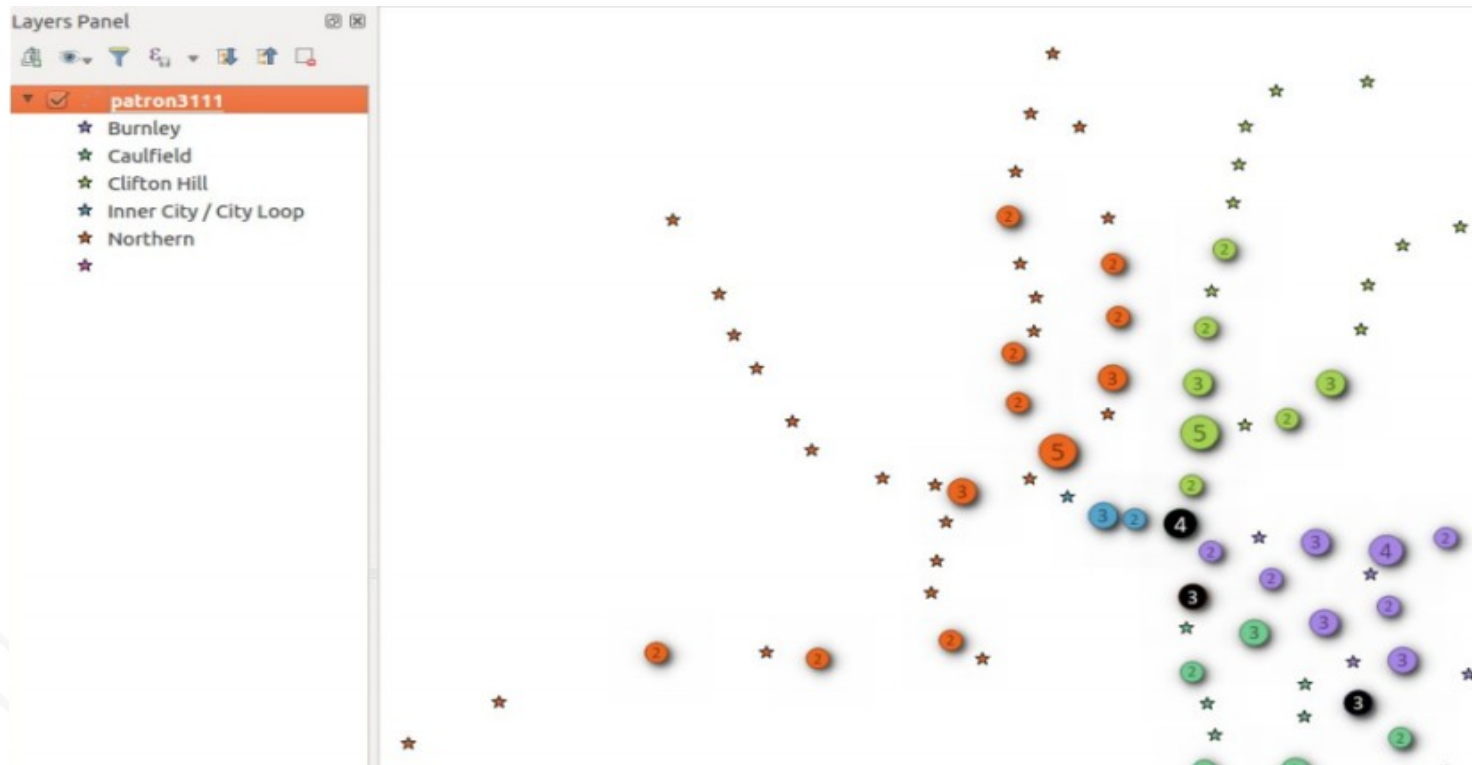
- g Buffer around labels / symbols that « removes » drawing from underlying layers.



Feature proposals

g Cluster renderer (Nyall Dawson)

- g Crowdfunding campaign going on



9 Thank you for your attention !



Sources

- g Tim Sutton, Report back: 15th QGIS hackfest in Girona
- g (FR) Médéric Ribreux, Sortie de QGIS 2.16 « Nødebo », LinuxFr.org
- g Larry Shaffer, State of the QGIS Project, FOSS4GNA 2016
- g Nyall Dawson, The road to QGIS 3.0
- g Nyall Dawson, QGIS 3 is underway
- g Matthias Kuhn, Prepare your plugins for QGIS 3