

# Open Source GIS: основы функциональности QGIS (версии 2.18.15 и 3.4.7)

Екатерина Подольская, к. т. н., ГИС-аналитик

# Содержание

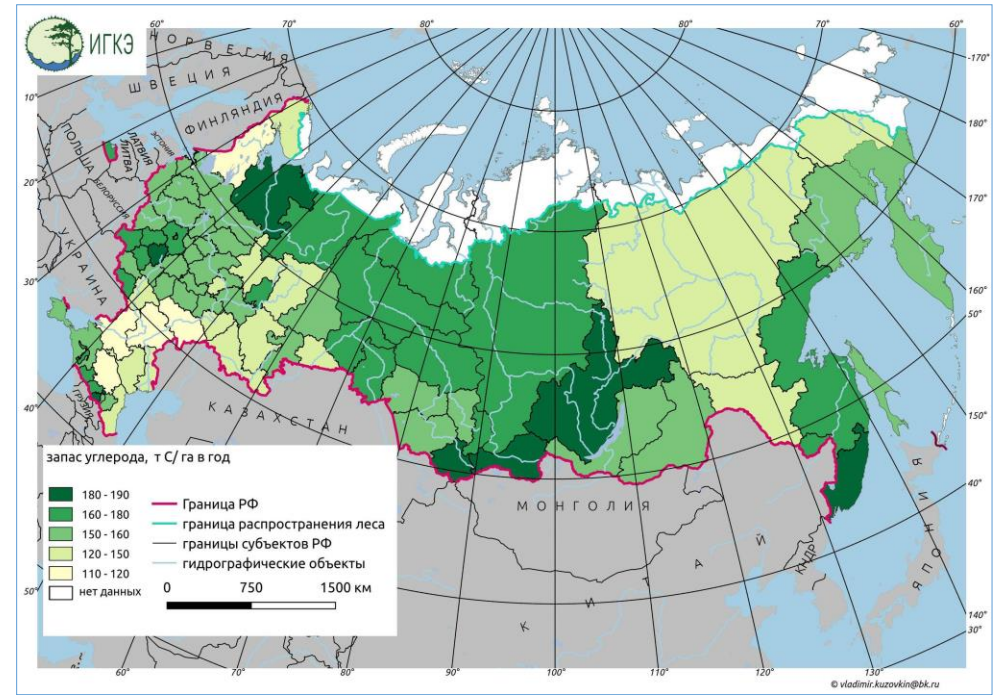
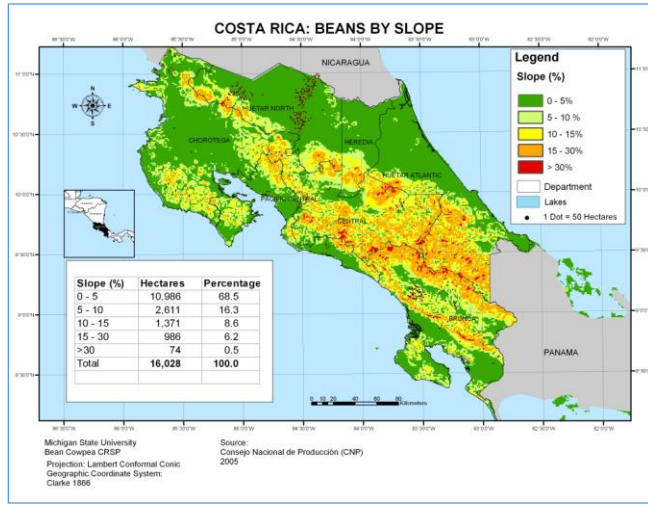
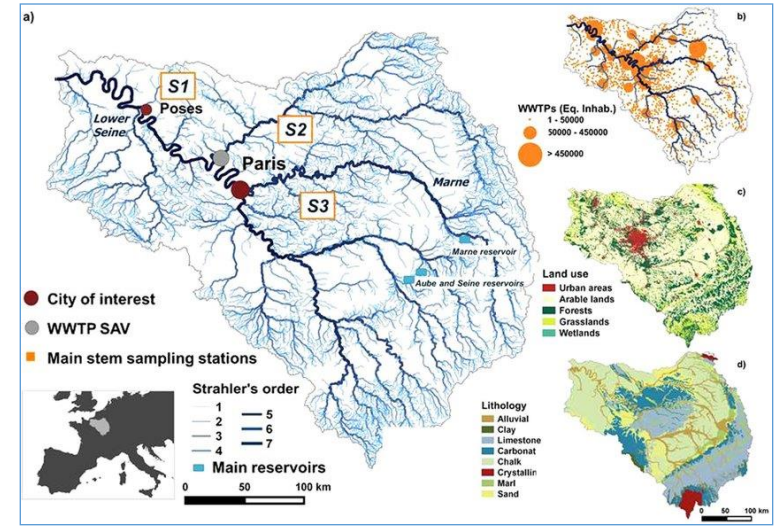
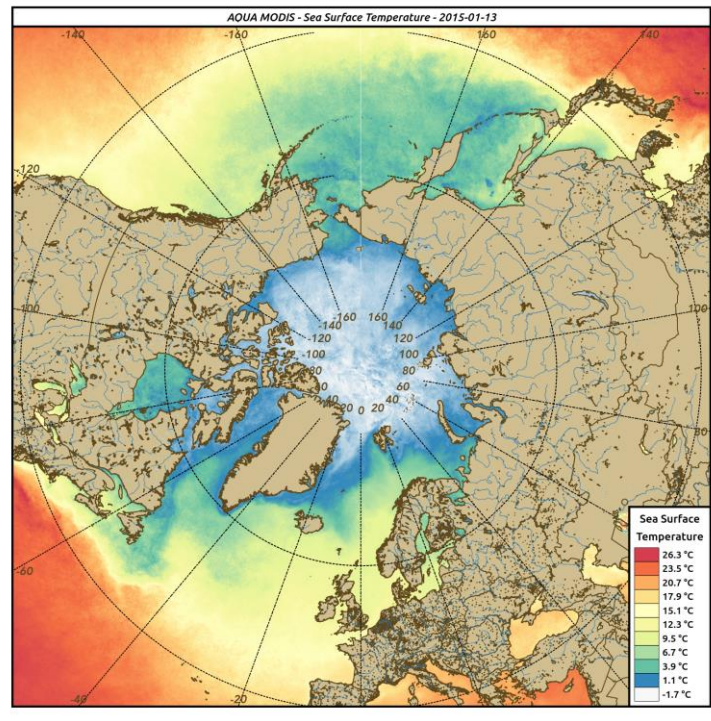
- Примеры карт в QGIS
- Приложение QGIS Desktop
- Как загрузить программу и использовать инструкцию для пользователя
- Расширение функциональности при помощи плагинов
- QGIS графический пользовательский интерфейс

## QGIS основные операции

- Добавление векторного слоя в проект
- Изменение условных знаков векторного слоя
- Подписи слоя
- Макет с картографическим оформлением
- Инструменты главного меню
- Панели главного меню
- Обработка данных

## Ссылки

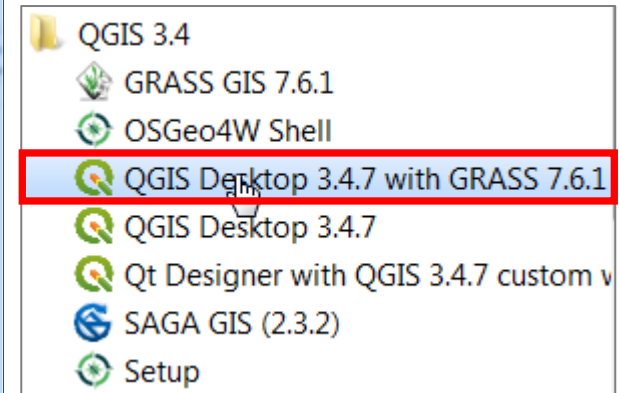
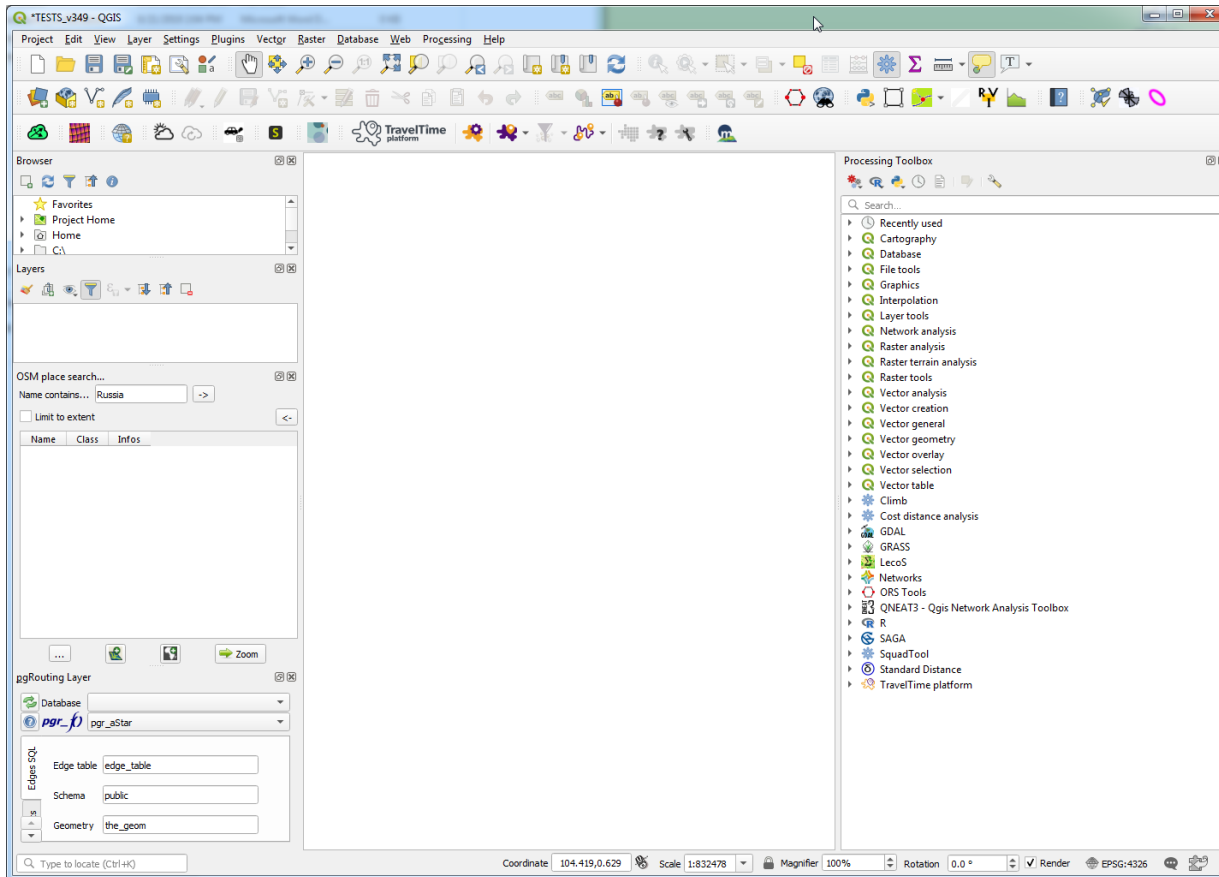
# Примеры карт в QGIS



<https://gis.stackexchange.com/questions/332264/thematic-map-made-in-qgis>

# Приложение QGIS Desktop

- Открытое свободное кроссплатформенное ГИС- приложение
- Отсутствие уровней лицензий, функциональность определяется плагинами



<https://en.wikipedia.org/w>

# Как загрузить программу и использовать инструкцию для пользователя

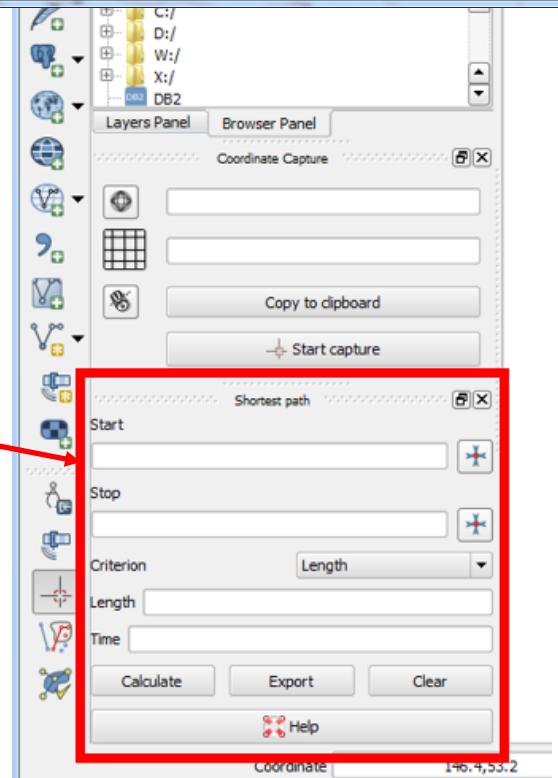
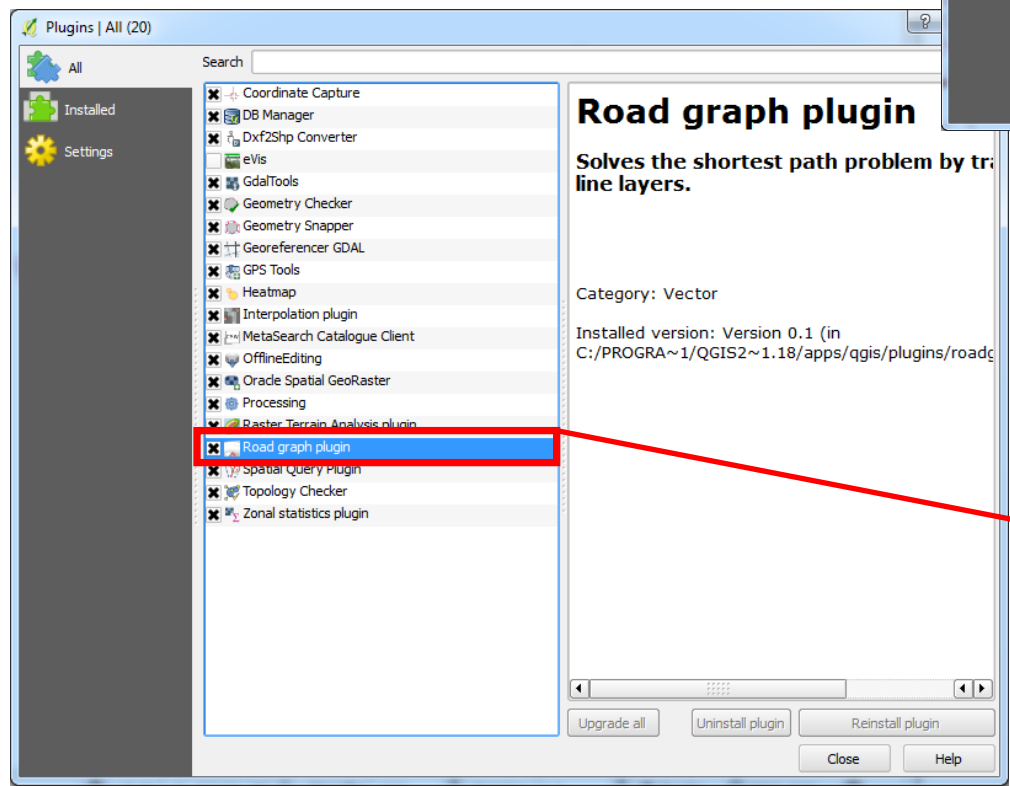
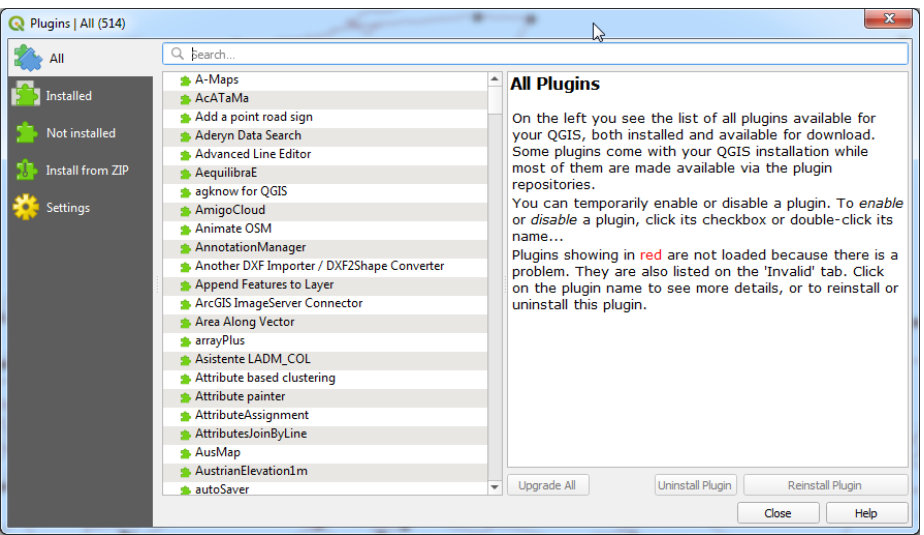
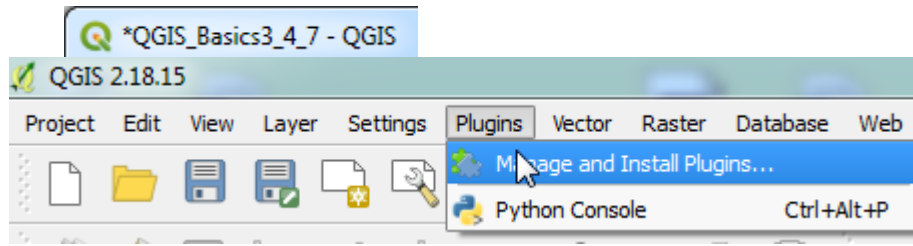
The image shows the QGIS 2.18.15 (Las Palmas) interface. The 'About QGIS - 64 Bit | About' dialog box is open, displaying the following information:

QGIS			
QGIS version	2.18.15	QGIS code revision	ac2d111ed1
Compiled against Qt	4.8.5	Running against Qt	4.8.5
Compiled against GDAL/OGR	2.2.3	Running against GDAL/OGR	2.2.3
Compiled against GEOS	3.5.0-CAPI-1.9.0	Running against GEOS	3.5.0-CAPI-1.9.0 r4084
PostgreSQL Client Version	9.2.4	Spatialite Version	4.3.0
QWT Version	5.2.3	PROJ.4 Version	493
QScintilla2 Version	2.7.2		

Below the dialog box, a web browser window shows the QGIS download page at <https://qgis.org/en/site/forusers/download.html>. The page features the QGIS logo and navigation links: DISCOVER QGIS, FOR USERS, GET INVOLVED, DOCUMENTATION. The main heading is 'Download QGIS for your platform'. The text on the page reads: 'Binary packages (installers) are available from this page. The current version is QGIS 3.6.2 'Noosa' and was released on 19.04.2019. The long-term repositories currently offer QGIS 3.4.7 'Madeira'. QGIS is available on Windows, MacOS X, Linux and Android.' At the bottom, there are links for 'INSTALLATION DOWNLOADS', 'ALL RELEASES', and 'SOURCES'.

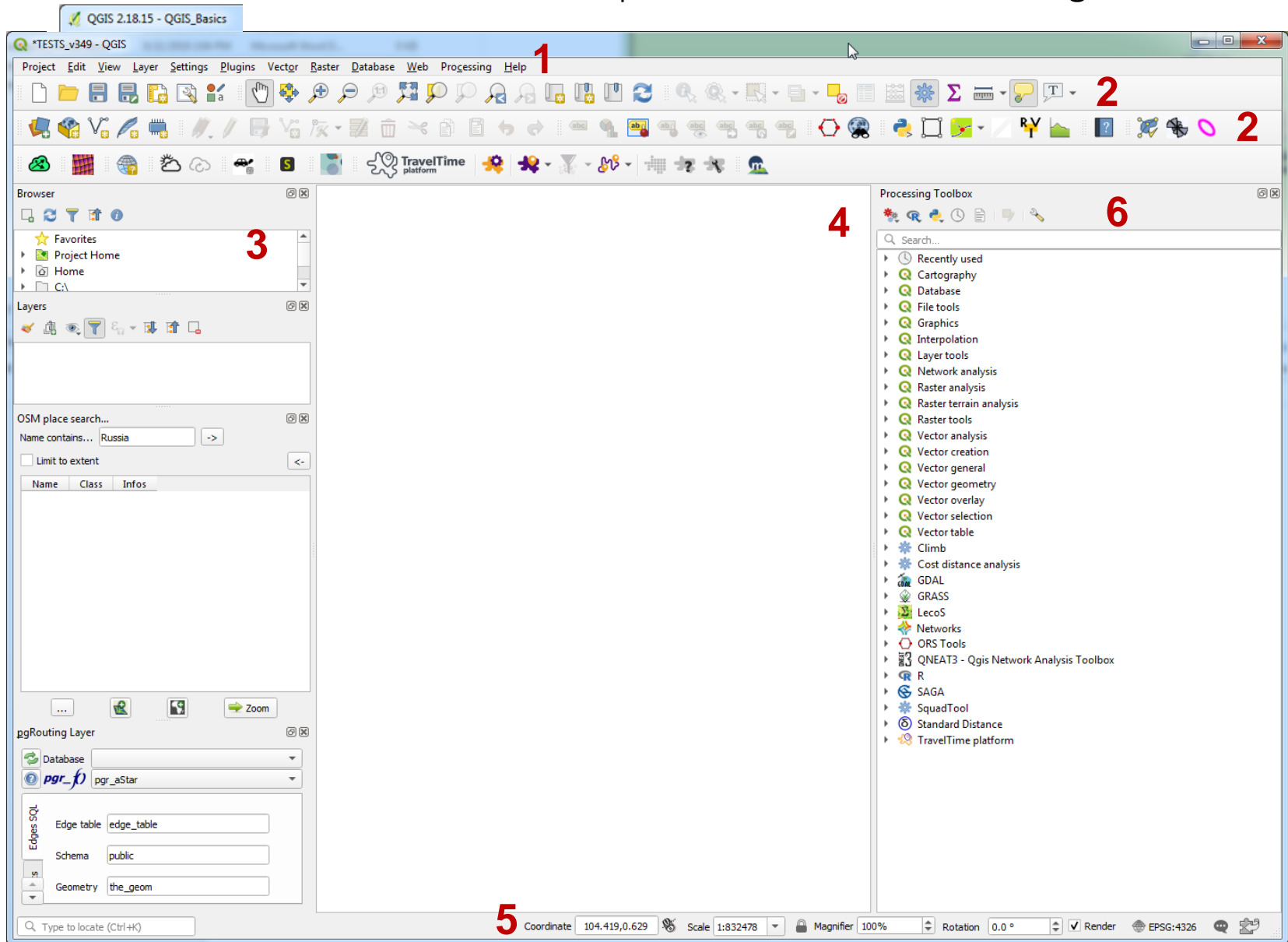
- 🔖 Preamble
- 🔖 Foreword
- > 🔖 Conventions
- > 🔖 Features
- 🔖 What's new in QGIS 2.18
- > 🔖 Getting Started
- > 🔖 QGIS GUI
- > 🔖 General Tools
- > 🔖 QGIS Configuration
- > 🔖 Working with Projections
- > 🔖 Managing Data Source
- > 🔖 Working with Vector Data
- > 🔖 Working with Raster Data
- > 🔖 Print Composer
- > 🔖 Working with OGC Data
- > 🔖 Working with GPS Data
- > 🔖 Authentication System
- > 🔖 GRASS GIS Integration
- 🔖 QGIS Standalone Browser
- > 🔖 QGIS processing framework
- > 🔖 Plugins
- > 🔖 Help and Support
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# Расширение функциональности при помощи плагинов



# QGIS графический пользовательский интерфейс

1. Menu Bar
2. Toolbars
3. Panels
4. Map View
5. Status Bar
6. Plugins



# Основные операции QGIS: добавление векторного слоя в проект

<http://www.naturearthdata.com/downloads/10m-cultural-vectors/>

The image illustrates the steps to add a vector layer in QGIS 2.18.15:

- Layer Menu:** The 'Layer' menu is open, and 'Add Vector Layer...' is selected.
- Add vector layer dialog:** The 'Source type' is set to 'File', and the 'Encoding' is 'UTF-8'.
- Data Source Manager:** The 'Vector' source type is selected, and the file path is 'ial\FreeGISdataSources\cultural\Vectors\ne\_10m\_roads.shx'.
- Layers Panel:** The project contains three layers: 'ne\_10m\_roads', 'ne\_10m\_populated\_places', and 'ne\_10m\_admin\_0\_countries'.
- Map View:** A world map is shown with the vector data overlaid on a pink background.



# Изменение условных знаков векторного слоя

Data source: <http://www.naturearthdata.com/downloads/10m-cultural-vectors/>

The screenshot displays the QGIS interface with three main windows:

- Layers Panel:** Located at the top left, it lists three layers: `ne_10m_roads`, `ne_10m_populated_places`, and `ne_10m_admin_0_countries`. The latter is selected and highlighted in blue. A red arrow points from this layer to the Layer Properties window.
- Layer Properties - ne\_10m\_admin\_0\_countries | Symbology:** This window is open in the foreground, showing the 'Symbology' tab. It displays a 'Single symbol' type with a 'Simple fill' symbol. The 'Fill color' is set to a light yellow-green. The 'Fill style' is 'Solid'. Other settings like stroke color, width, and style are also visible.
- Style Manager:** This window is open in the foreground, showing a grid of various symbols and fill styles. The 'Fill' tab is selected. The symbols include 'gradient plasma', 'gray 3 fill', 'hashed black /', 'hashed black X', 'hashed black \', 'outline blue', 'outline green', 'outline red', 'outline xpattern', and 'pattern dot black'. The 'Import / Export' button is visible at the bottom.

The background shows a world map where the countries are filled with the light yellow-green color defined in the Layer Properties window.

# Подписи слоя



Layer Properties - ne\_10m\_admin\_0\_countries | Labels

Single labels

Label with

Text Sample

Lorem Ipsum

Rule-based labeling

Label (no filter)

Min. scale

Max. scale

Text

Edit Rule

Description

Filter

Label with

Text Sample

Text

Font: MS Shell Dlg 2

Style: Regular

Size: 10.0000 Points

Color

ne\_10m\_admin\_0\_countries :: Features Total: 255, Filtered: 255, Selected: 0

	SU_A3	BRK_DIFF	NAME	NAME_LONG	BRK_A3	BRK_NAME	BRK_GROUP
1	AFG	0	Afghanistan	Afghanistan	AFG	Afghanistan	Afg
2	WSB	0	Akrotiri	Akrotiri	WSB	Akrotiri	Akr.
3	ALD	0	Åland	Åland Islands	ALD	Åland	Ålan
4	ALB	0	Albania	Albania	ALB	Albania	Alb.
5	DZA	0	Algeria	Algeria	DZA	Algeria	Alg.
6	ASM	0	American Samoa	American Samoa	ASM	American Samoa	Am
7	AND	0	Andorra	Andorra	AND	Andorra	Anc
8	AGO	0	Angola	Angola	AGO	Angola	Ang
9	AIA	0	Anguilla	Anguilla	AIA	Anguilla	Ang
10	ATA	0	Antarctica	Antarctica	ATA	Antarctica	Ant
11	ATG	0	Antigua and Ba...	Antigua and Barbuda	ATG	Antigua and Ba...	Ant
12	ARG	0	Argentina	Argentina	ARG	Argentina	Arg

Show All Features

Layers

ne\_10m\_roads

ne\_10m\_populated\_places

ne 10m admin 0 countries

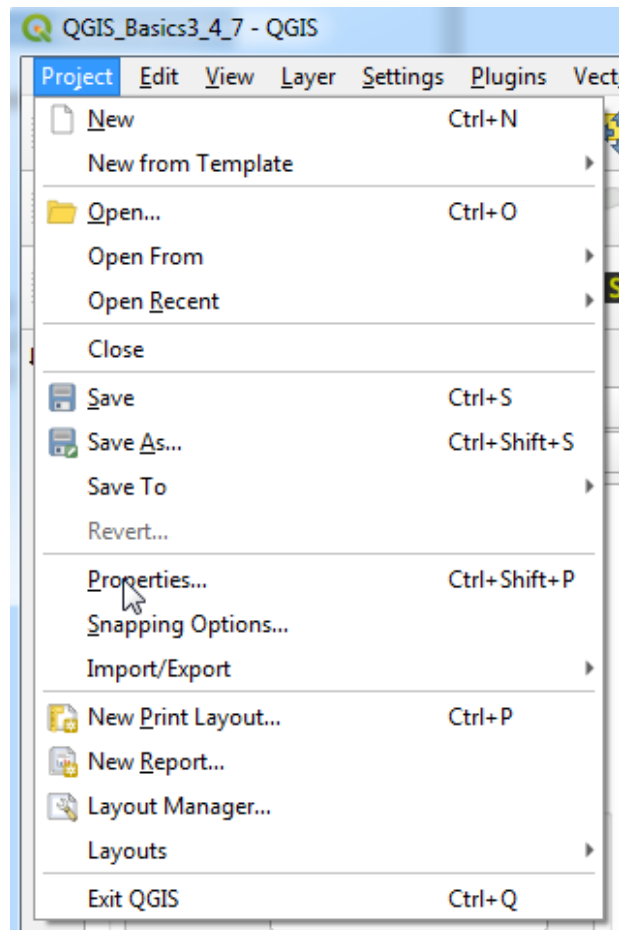
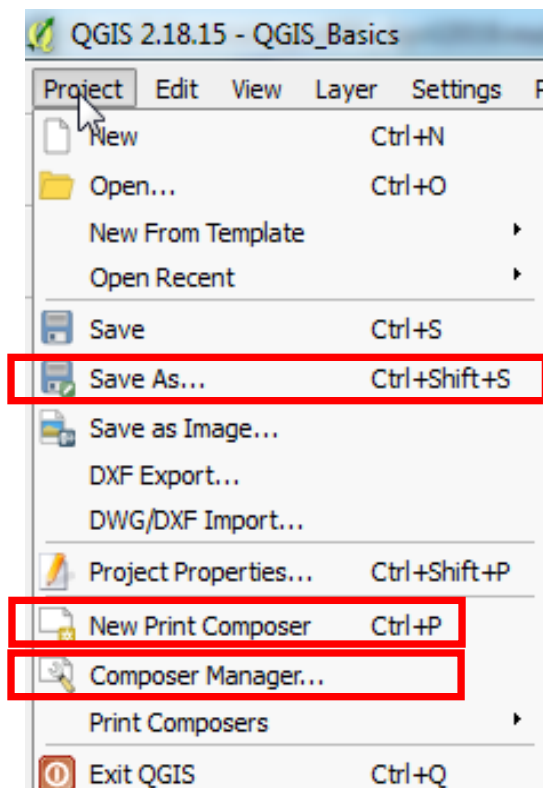
Data source: <http://www.naturalearthdata.com/downloads/10m-cultural-vectors/>

# Макет с картографическим оформлением

The image is a collage of screenshots from QGIS 2.18.15 illustrating the steps to create a print layout with a map. The main window shows a map of Russia with layers for roads, populated places, and administrative boundaries. The 'Project' menu is open, with 'New Print Composer' highlighted. A 'Composer title' dialog box is shown with the title 'Layout for QGIS'. The 'Layout for QGIS' menu is open, with 'Export as Image...' highlighted. The 'Import/Export' submenu is open, with 'Export Map to Image...' highlighted. The 'Create print layout Title' dialog box is shown with the title 'Layout for QGIS V347'. The main map window shows a map of Russia with a legend, scale bar, and north arrow. The 'Items' panel on the right shows the map items: Scalebar, Legend, and Map 1. The 'Guides' panel shows horizontal and vertical guides for the layout.


Data source: <http://www.naturalearthdata.com/downloads/10m-cultural-vectors/>

# КАК СОХРАНИТЬ ПРОЕКТ И МАКЕТ ПРОЕКТА

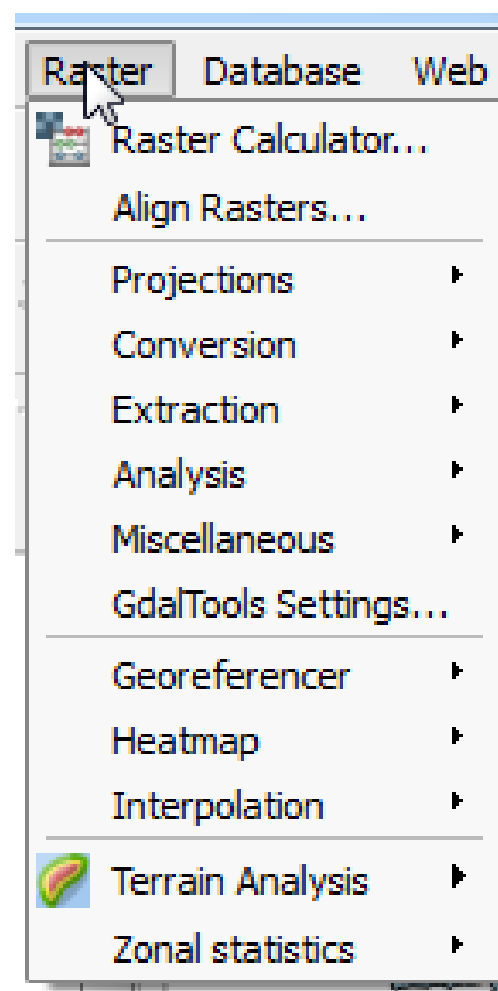
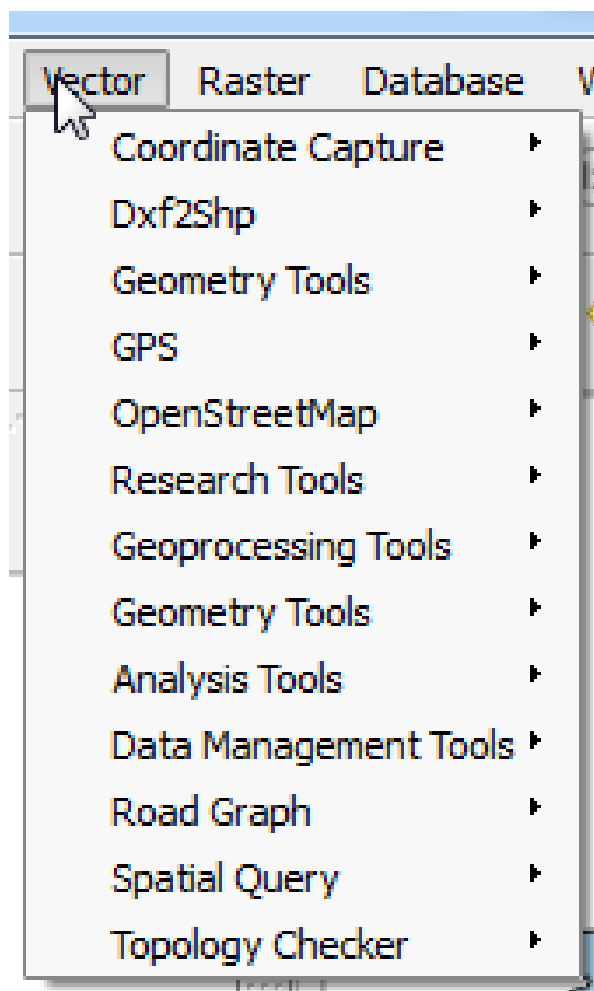
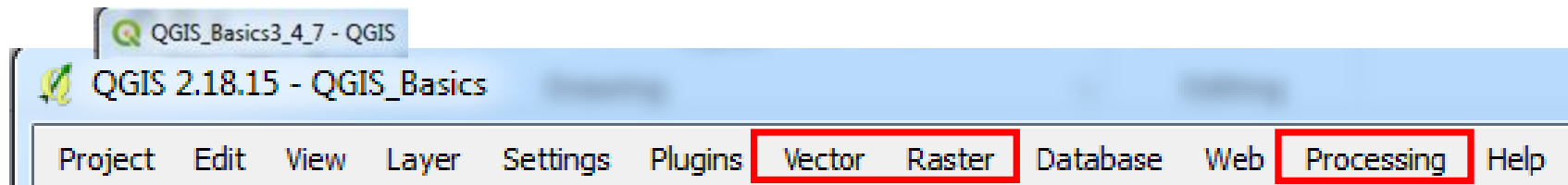


File name:

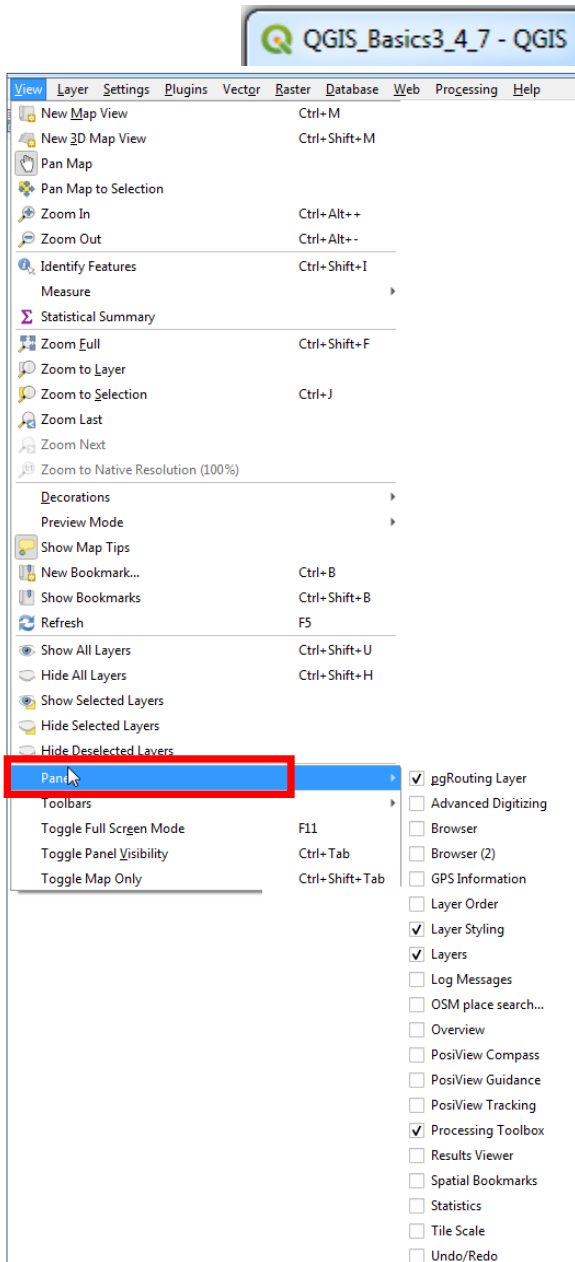
Save as type:

Name	Date modified	Type	Size
 QGIS_Basics3_4_7.qgz	9/19/2019 2:34 PM	QGIS Project	24 KB

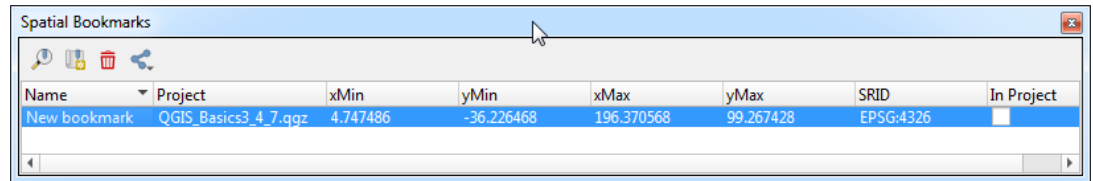
# Инструменты главного меню



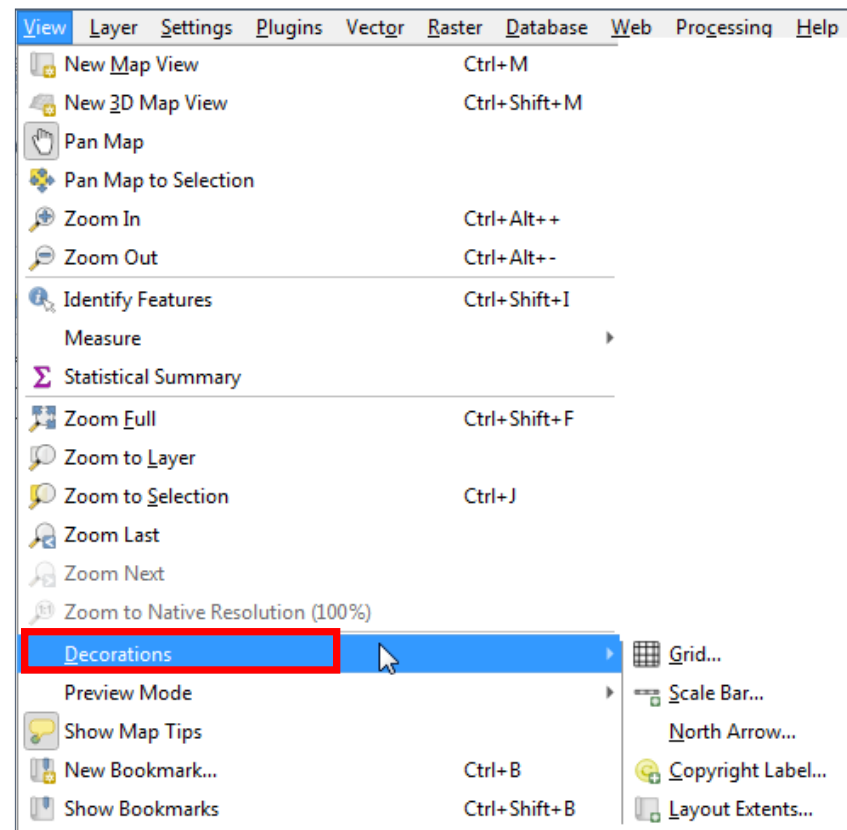
# Панели главного меню



## Bookmarks



## Map elements (grid, scale bar, north arrow)



# Обработка данных

The image displays the QGIS Processing Toolbox and several algorithm dialog boxes. The Processing Toolbox on the left shows a tree view of tool categories, with 'Vector overlay tools' expanded to show 'Clip'. A search window for 'QGIS\_Basics3\_4\_7 - QGIS' is overlaid on the toolbox, listing various tool categories like 'Recently used', 'Cartography', 'Database', etc. Three dialog boxes are open: 'Reproject layer' (input: APCoastline [EPSG:4326], target CRS: EPSG:4326), 'Clip' (input: APCoastline [EPSG:4326], clip layer: APCountriesLowRes [EPSG:4326]), and 'Fixed distance buffer' (input: APCoastline [EPSG:4326]). The 'Processing Modeler' window at the bottom shows a list of input types such as Boolean, CRS, Distance, Enum, Expression, etc.

# Ссылки

- <https://ru.wikipedia.org/wiki/QGIS>
- <http://www.qgistutorials.com/en/>
- [https://docs.qgis.org/2.18/en/docs/user\\_manual/](https://docs.qgis.org/2.18/en/docs/user_manual/)
- [https://docs.qgis.org/3.4/en/docs/training\\_manual/index.html](https://docs.qgis.org/3.4/en/docs/training_manual/index.html)
- GDAL-SOFTWARE-SUITE. Geospatial data abstraction library. <http://www.gdal.org>
- GRASS-PROJECT. Geographic resource analysis support system. <http://grass.osgeo.org>
- NETELER, M., AND MITASOVA, H. Open source gis: A GRASS GIS approach, 2008.
- OGR-SOFTWARE-SUITE. Geospatial data abstraction library. <http://www.gdal.org/ogr>
- OPEN-GEOSPATIAL-CONSORTIUM. Web map service (1.1.1) implementation specification. <http://portal.opengeospatial.org>
- OPEN-GEOSPATIAL-CONSORTIUM. Web map service (1.3.0) implementation specification. <http://portal.opengeospatial.org>
- POSTGIS-PROJECT. Spatial support for PostgreSQL. <http://postgis.refrations.net/>