



# PgMetadata

A  **QGIS** plugin to manage metadata  
for your **PostgreSQL** data 

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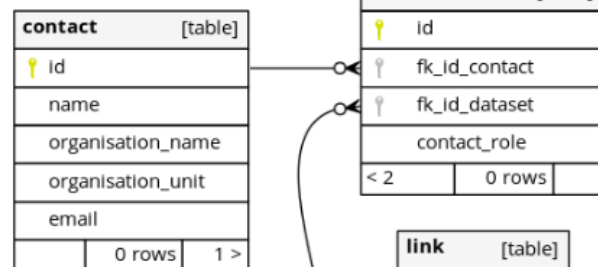




# What is Metadata ?

Help people to understand your data

- **Identification:** Title, abstract, categories, themes, keywords, data last update,
- **Spatial properties:** spatial level, optimal scales,
- **Publication:** date, frequency, license, confidentiality
- **Computed:** feature count, geometry type, projection name & code, extent
- **Contact(s):** owner, publisher, custodian, etc.
- **Link(s)** to resources, web pages, documents



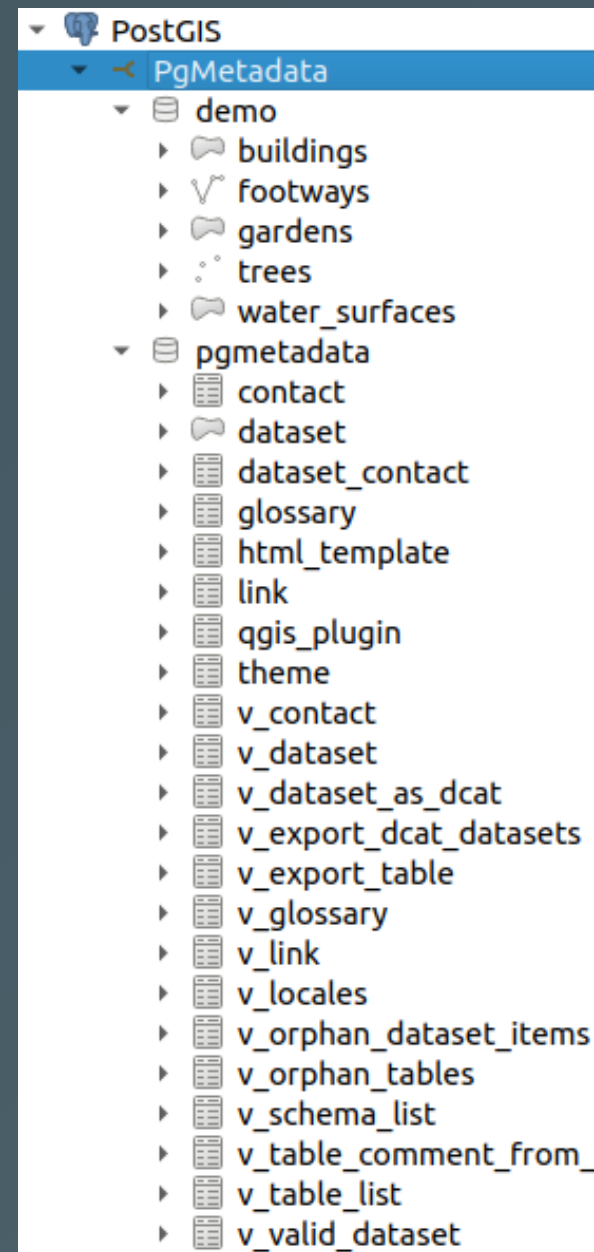
dataset [table]	
Id	primary key
uid	
table_name	
schema_name	
title	
abstract	
categories	
keywords	
spatial_level	
minimum_optimal_scale	
maximum_optimal_scale	
publication_date	
publication_frequency	
license	
confidentiality	
feature_count	
geometry_type	
projection_name	
projection_authid	
spatial_extent	
creation_date	
update_date	
geom	
data_last_update	
themes	



# Pg Metadata

Designed for people using **PostgreSQL** to store their layers data.

- **Centralized:** data & metadata in the **same database**
- **Accessible:** a PostgreSQL connection to share the metadata
- **PostgreSQL** rich features:
  - **SQL powered:** relations, constraints, views, functions, triggers
  - **Rights** & access control: readers VS editors
- **See & Edit** with your preferred SQL client:
  - Libreoffice, PgAdmin, psql, DBeaver,
  - **QGIS** with its powerful forms !
- **Backup & restore** metadata with your data

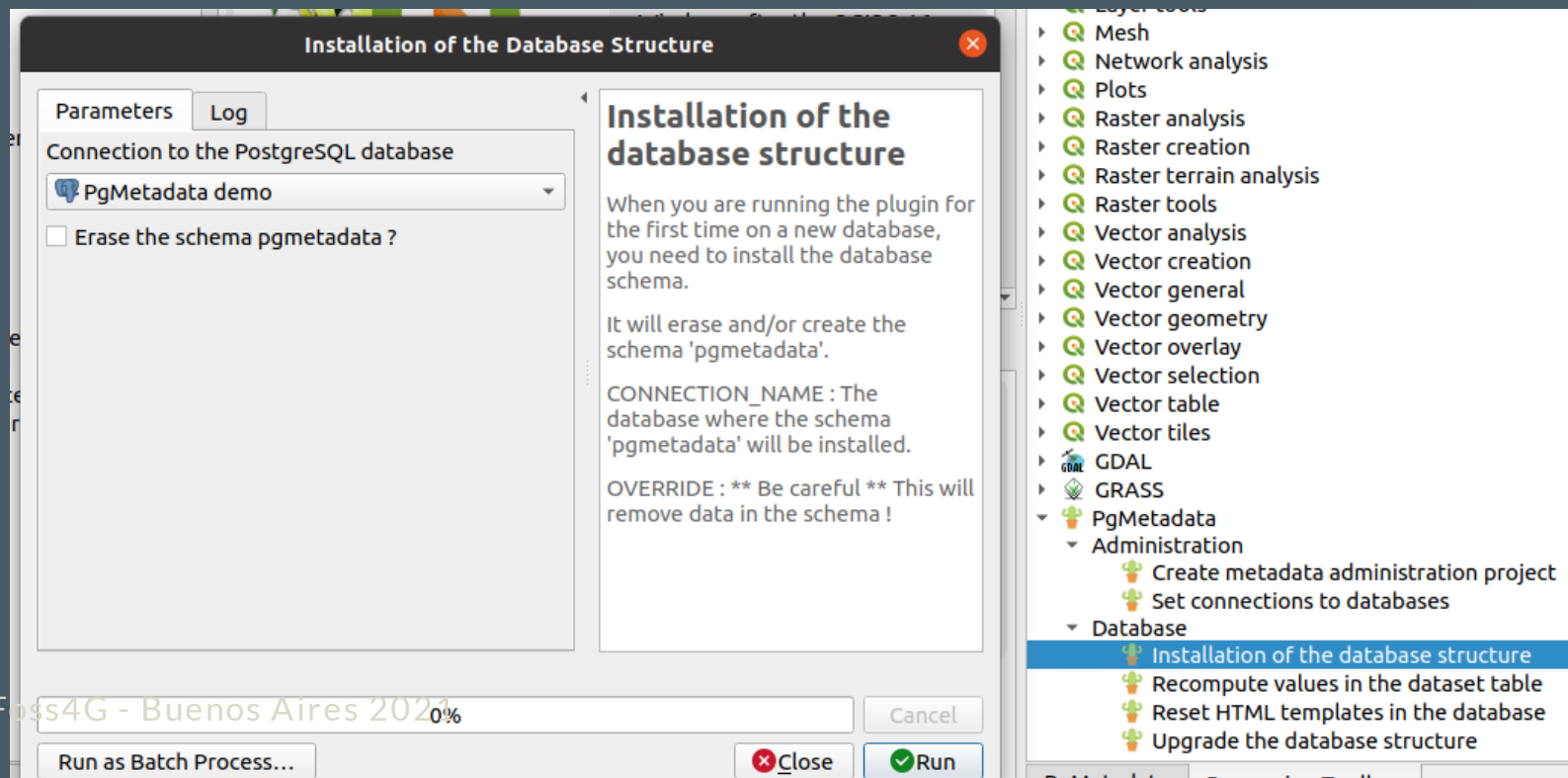


# As the GIS administrator

# Create the pgmetadata schema

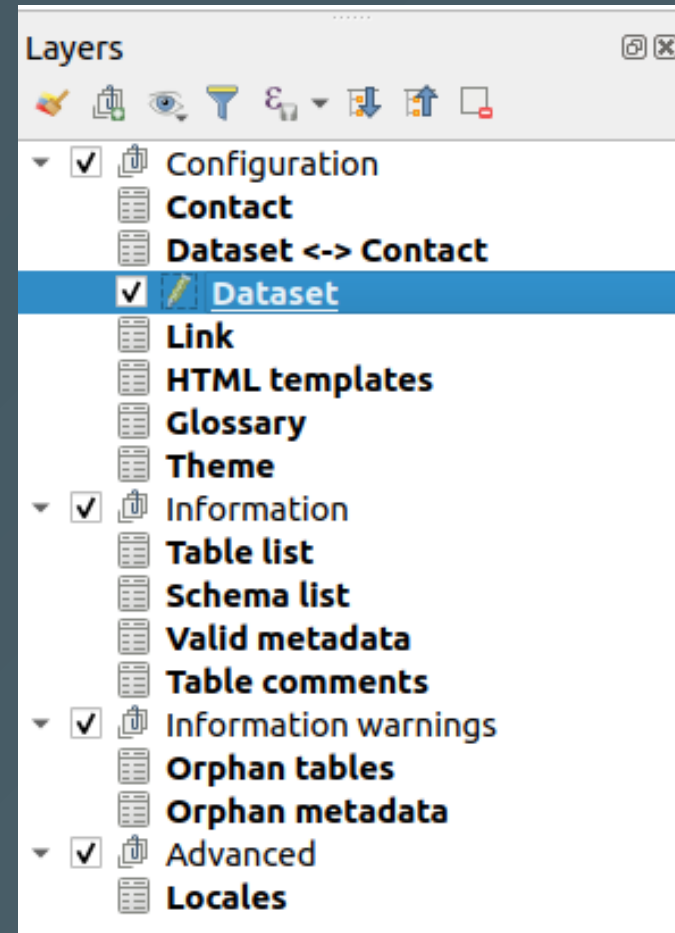
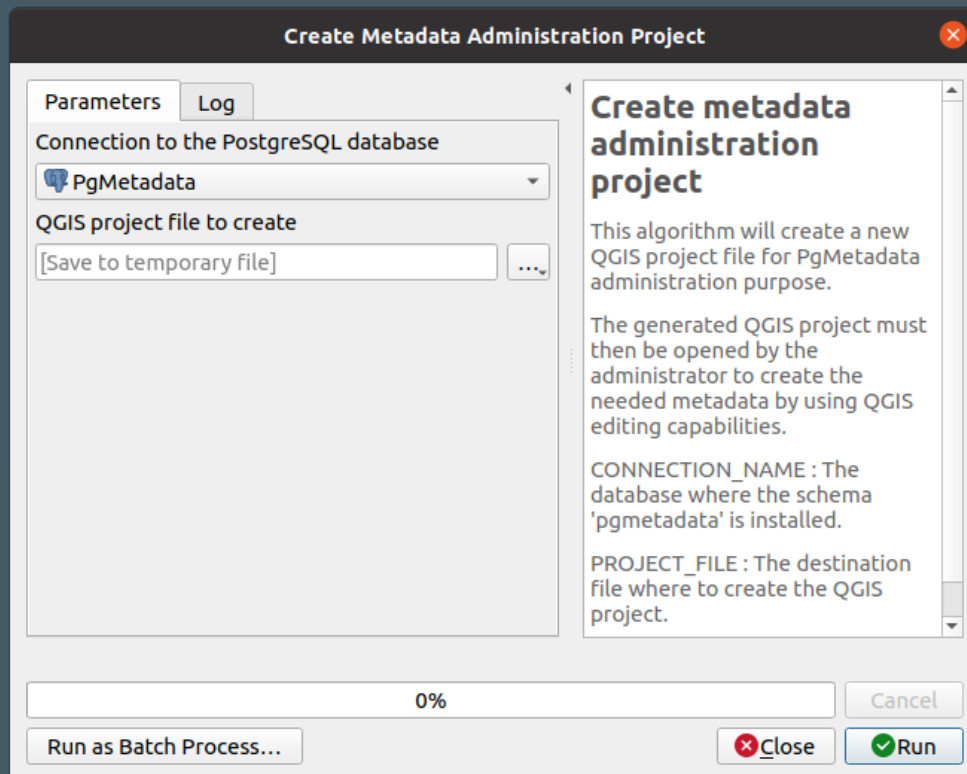
The plugin is using a **schema** `pgmetadata` in PostgreSQL.

A **QGIS processing algorithm** allows to create it in your database and fill it with the needed **tables, views and data** (glossary and translations)



# A QGIS project builder

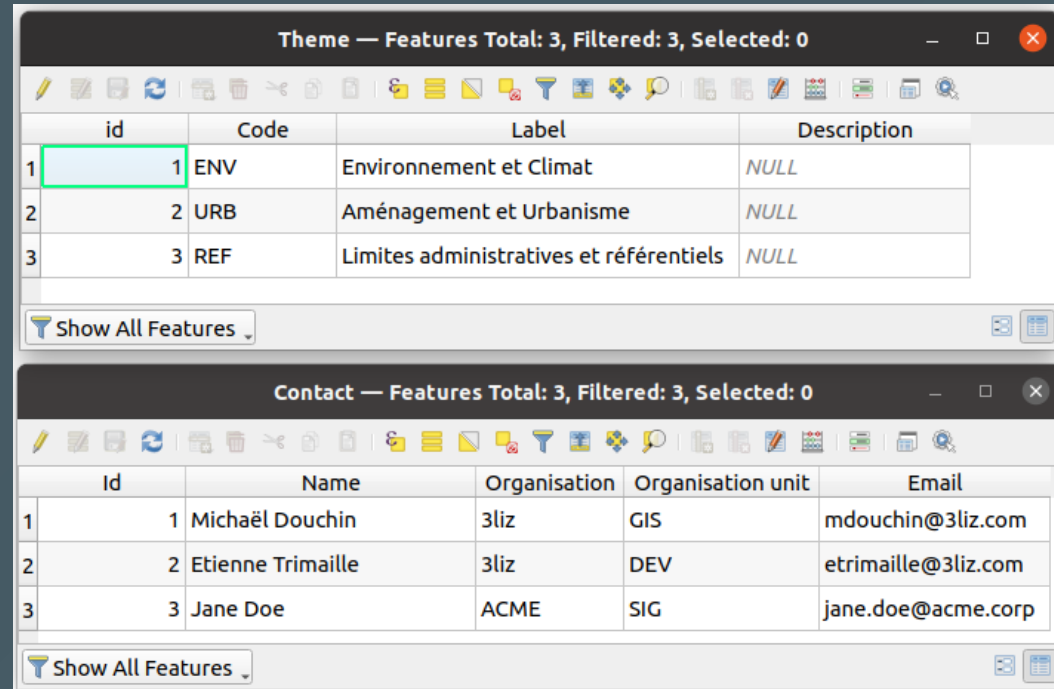
A QGIS processing algorithm to create a full featured **QGIS administration project** with rich forms:



# Prepare editing

Create the needed contextual data in the dedicated **tables**:

- User-defined **themes**
- **Contacts**: name, organisation, unit, email
- The existing **glossary** can be changed
- **Translations** can be added if missing



The screenshot shows two QGIS table views. The top window, titled 'Theme', displays a table with 4 columns: id, Code, Label, and Description. The bottom window, titled 'Contact', displays a table with 5 columns: Id, Name, Organisation, Organisation unit, and Email. Both windows show 3 features each, with the first feature selected in each table.

id	Code	Label	Description
1	ENV	Environnement et Climat	NULL
2	URB	Aménagement et Urbanisme	NULL
3	REF	Limites administratives et référentiels	NULL

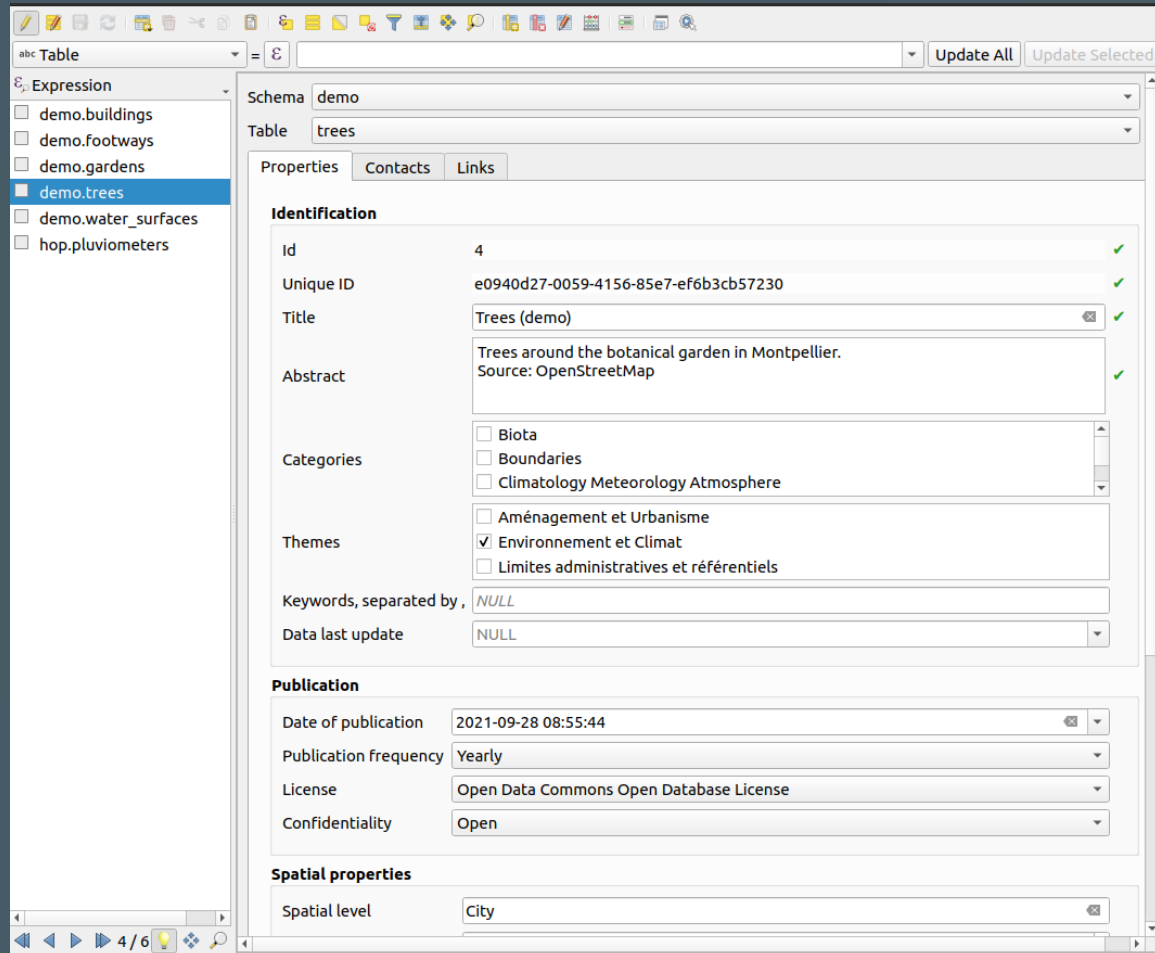
  

Id	Name	Organisation	Organisation unit	Email
1	1 Michaël Douchin	3liz	GIS	mdouchin@3liz.com
2	2 Etienne Trimaille	3liz	DEV	etrimaille@3liz.com
3	3 Jane Doe	ACME	SIG	jane.doe@acme.corp

# Edit your datasets with QGIS

Choose the **schema** and **table**, then edit:

- the main **fields**: title, abstract, keywords, etc.
- the **contacts** and their roles
- the **dataset** related links



The screenshot shows the QGIS PgMetadata interface. On the left, a list of schemas and tables is displayed, with 'demo.trees' selected. The main window shows the 'Properties' tab for the 'demo' schema and 'trees' table. The 'Identification' section includes fields for Id (4), Unique ID (e0940d27-0059-4156-85e7-ef6b3cb57230), Title (Trees (demo)), and Abstract (Trees around the botanical garden in Montpellier. Source: OpenStreetMap). The 'Categories' section has checkboxes for Biota, Boundaries, and Climatology Meteorology Atmosphere. The 'Themes' section has checkboxes for Aménagement et Urbanisme, Environnement et Climat (checked), and Limites administratives et référentiels. The 'Keywords, separated by ,' field is NULL. The 'Data last update' field is NULL. The 'Publication' section includes Date of publication (2021-09-28 08:55:44), Publication frequency (Yearly), License (Open Data Commons Open Database License), and Confidentiality (Open). The 'Spatial properties' section includes Spatial level (City).





# Admin helpers

Some data are **calculated** from the table content:

- valid **unique id** for the dataset `e0940d27-0059-4156-85e7-ef6b3cb57230`
- layer extent, feature count, geometry type, projection id & name.
- creation and update dates, etc.

Some useful **views**:

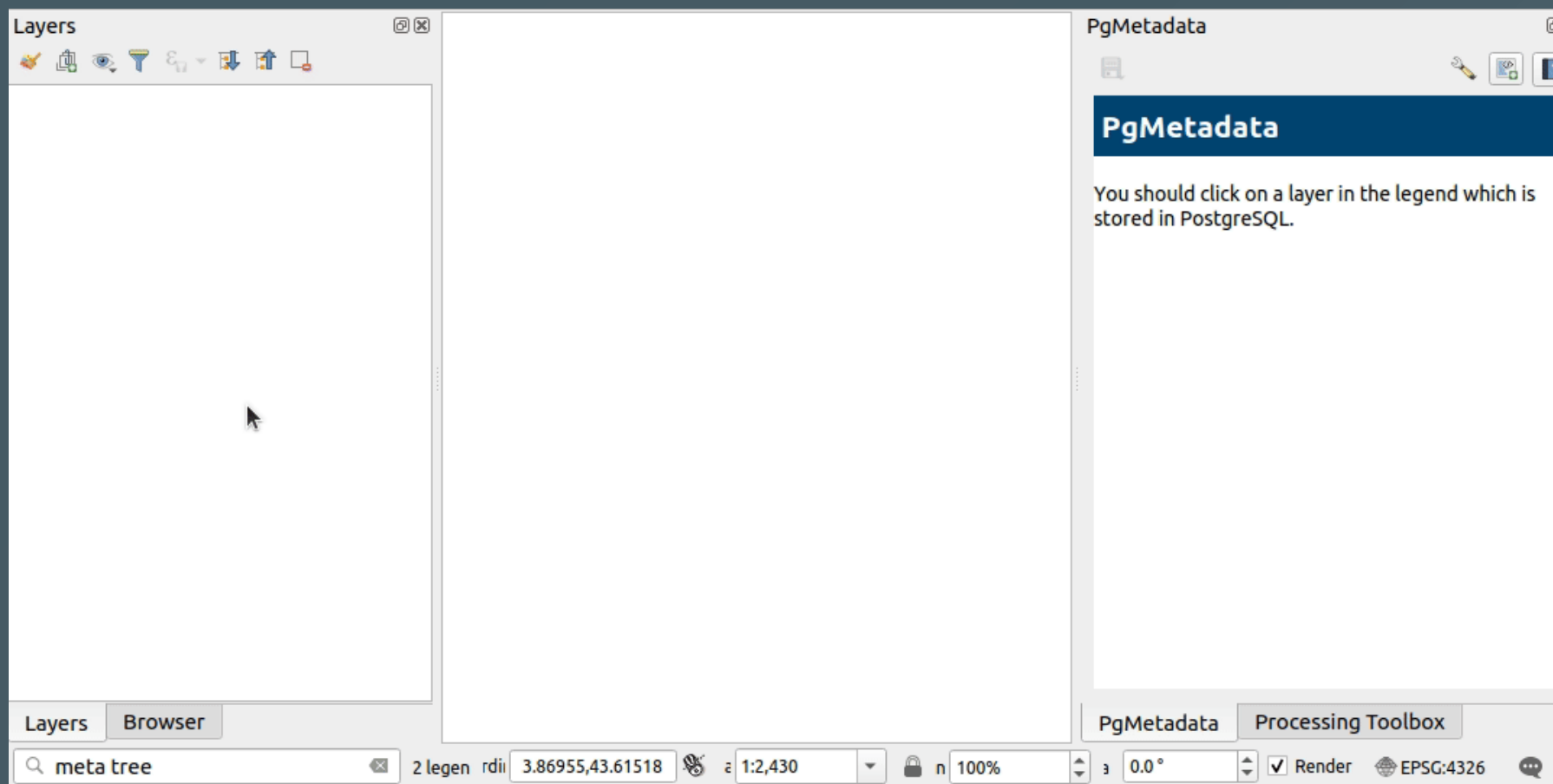
- **Orphan PostgreSQL tables**: no metadata exists in the dataset table for this tables
- **Orphan metadata**: a line exists in your dataset table, but no table corresponds in your database
- **Flat representation of the datasets**: lists the datasets with contacts and links aggregated

# As the GIS user in

# QGIS

# QGIS locator & Metadata panel

CTRL+K, type **meta**, find the table, add the layer & view metadata





# Export

The user can export each dataset metadata to:

- HTML
- PDF
- DCAT <https://www.w3.org/TR/vocab-dcat-2/>

```
<dcat:dataset>
  <dcat:Dataset>
    <dct:identifier>e0940d27-0059-4156-85e7-ef6b3cb57230</dct:identifier>
    <dct:title>Trees (demo)</dct:title>
    <dct:description>Trees around the botanical garden in Montpellier.
Source: OpenStreetMap</dct:description>
    <dct:language>en</dct:language>
    <dct:license>Open Data Commons Open Database License</dct:license>
    <dct:rights>Open</dct:rights>
    <dct:accrualPeriodicity>Yearly</dct:accrualPeriodicity>
    <dct:spatial>{"type":"Polygon","coordinates":[]}</dct:spatial>
    <dct:created rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2021-09-28T08:55:44.606067</dct:created>
    <dct:issued rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2021-09-28T08:55:44.606067</dct:issued>
    <dct:modified rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2021-09-28T08:55:44.606067</dct:modified>
    <dcat:contactPoint>
      <vcard:Organization>
        <vcard:fn>Jane Doe - ACME (SIG)</vcard:fn>
        <vcard:hasEmail rdf:resource="jane.doe@acme.corp">jane.doe@acme.corp</vcard:hasEmail>
      </vcard:Organization>
    </dcat:contactPoint>
```



**More ?**



# Advanced features

- Easily change the **templates** for the HTML content (visible in the panel): they are stored inside the `html_template` table
- Generate a dataset **HTML card** with **SQL**

```
SELECT pgmetadata.get_dataset_item_html_content('demo', 'trees', 'fr');
```

- Generate a DCAT representation with SQL for one or many tables

```
SELECT *  
FROM pgmetadata.get_datasets_as_dcat_xml('fr')  
WHERE True
```

- QGIS configuration file variables when **deploying QGIS in your organisation** (hide admin tools, auto-activate plugin)

```
[pgmetadata]  
auto_open_dock=true  
end_user_only=true  
connection_names=Connection 1;Connection 2;Connection 3
```

```
[Plugins]  
pg_metadata=true
```

# Share

(web) Applications can use the **SQL functions** to show the localized metadata in **HTML format** or **publish the full catalog** in **DCAT** (and be harvested by Third party Metadata portals).

Example of **Lizmap Web Client PgMetadata module**:  
<https://github.com/3liz/lizmap-pgmetadata-module/>

**GARD 30** Département

Données ouvertes Données de référence

Search Connect

Layers Close

Legend

- Administratif
  - Mairies
  - ☒ Communes
  - Cantons électoraux
  - EPCI
  - PETR
  - Pays
  - SCOT
  - Circonscriptions législatives
  - Sites du département
- Développement social
  - Etablissements pers. handicapées adultes
  - Etablissements pers. âgées
  - ☒ Crèches
  - Maison France Service (MFS)
  - Maison de services au public (MSAP)
  - Maison de santé pluri-professionnelle (MSP)

**GARD 30** Département

Département du Gard S.I.G 3.0

► Identification

<b>Titre</b>	Les crèches gardoises
<b>Résumé</b>	Localisation des crèches à l'adresse à partir d'un fichier transmis par la direction petite enfance - Reste une incertitude sur certaines localisation à préciser_ rajout en 2013 d'un ID carto commun afin de faciliter les mises à jour
<b>Catégories</b>	
<b>Thèmes</b>	Administration et action publique, Social, santé et sports
<b>Mots clés</b>	gard, social;équipement collectif;crèche;enfance

► Référence géographique

<b>Granularité</b>	POI
<b>Echelle</b>	



# Documentation

- For the administrator
- For the end user
- For the system administrator
- Changelogs, videos, road map, database structure, etc.

<https://docs.3liz.org/qgis-pgmetadata-plugin/>

The screenshot shows the PgMetadata documentation website. The header is green with the PgMetadata logo and a search bar. The navigation menu includes links to docs.3liz.org, Home, User guide, Lizmap, Processing, References, Changelog, Contributing, Roadmap, and Database. The main content area is titled 'User guide' and contains a list of links: Index, End user, GIS admin, Sys admin, Advanced, and Video tutorials. The 'User guide' section is expanded, showing a list of sections: 'a quick start guide showing how to install and use PgMetadata', 'for end users, such as GIS technician who are not editing metadata or managing the PostGIS database', and 'for GIS administrator who are maintaining the PostGIS database, creating new metadata'.

PgMetadata

Search

docs.3liz.org Home User guide Lizmap Processing References Changelog Contributing Roadmap Database

User guide

User guide

This user guide has been split into 4 sections mainly :

- a **quick start** guide showing how to install and use PgMetadata
- for **end users**, such as GIS technician who are not editing metadata or managing the PostGIS database
- for **GIS administrator** who are maintaining the PostGIS database, creating new metadata




# Conclusion



# Why another metadata tool ?

Many open-source tools already exist to store and share metadata.

## Why **PgMetadata** ?

- See the previous slide about **PostgreSQL** 
- Keep the metadata **as close as possible to the data**
- Not a new application, but a set of tools for **QGIS** and your **existing PostgreSQL database**:
  - the GIS administrator already uses PostgreSQL and can understand easily how PgMetadata works,
  - the GIS users do not need to learn to use a new application
- **GIS user oriented**: as a user, search & get the metadata **from QGIS** *VERSUS* browse a web page and download the data
- It is **NOT designed to replace the existing metadata web portals**, but to be used as a **complementary** tool !



# Road map

More **locales** (today in English, French & German)

New features:

- Support **raster** tables
- **Auto-fill** the dataset table from a selection of PostgreSQL tables/views
- **Import/Export** the QGIS native layer metadata properties
- Import metadata from **DCAT**



# Resources

- Documentation: <https://docs.3liz.org/qgis-pgmetadata-plugin/>
- Database structure: <https://docs.3liz.org/qgis-pgmetadata-plugin/database/>
- Source code: <https://github.com/3liz/qgis-pgmetadata-plugin/>
- Translations: <https://www.transifex.com/3liz-1/pgmetadata/>
- Twitter: [@3liz\\_news](https://twitter.com/3liz_news)
- Email: [info@3liz.com](mailto:info@3liz.com)

New version **1.1.0** released **today** : views support, German translations, new items in the glossary, enhanced locator search, etc.



# Thanks



Thanks to the French **Gard province** for funding this extension

PgMetadata already has external **contributors**: thanks **@effjot** & **@tschuettenberg** for testing and helping !

# Thank you for your attention

