



# Accessing '*wosis\_latest*' from QGIS using WFS

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## Introduction

There are two options for accessing 'wosis\_latest', the dynamic version of standardised soil data served from WoSIS (World Soil Information Service):

- Using [GraphQL API](#) (see Calisto 2023).
- From QGIS using WFS<sup>1</sup>.

This tutorial covers the WFS option; it has been adapted from Ribeiro *et al.* (2018, Appendix A). It explains how a WFS connection can be created, and how specific data layers can be selected. Subsequently, options for selecting point data for a defined area are illustrated, and how the results can be saved for further processing using auxiliary software such as R. In conclusion, users are recommended to regularly check the WFS as 'wosis\_latest' is a dynamic data set (see Batjes *et al.* 2019).

More details about WoSIS can be found via the following FAQ page.

## Creating a WFS connection

To load WoSIS points in QGIS<sup>2</sup>, you will first need to create a WFS connection.

To do this press the 'Add WFS layer' button, then press 'New', give the connection a name, for example 'WoSIS Latest'.

The URL field will then show: [http://maps.isric.org/mapserv?map=/map/wosis\\_latest.map](http://maps.isric.org/mapserv?map=/map/wosis_latest.map).

Press the OK button.

Press 'Connect', and all available layers will appear on screen (Figure 1).

No authentication is needed, so the boxes for 'Username' and 'Password' boxes can be left blank.

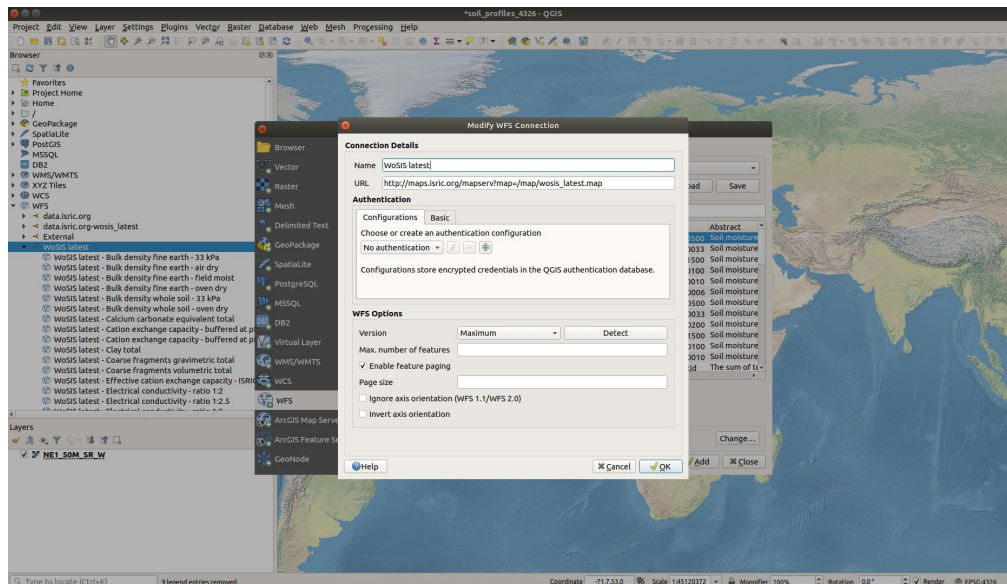


Figure 1. Adding 'wosis\_latest' to the WFS configuration screen in QGIS.

<sup>1</sup> The procedure for ArcGIS is provided at <https://pro.arcgis.com/en/pro-app/latest/help/data/services/add-wfs-services.htm>.

<sup>2</sup> <http://www.qgis.org/en/site/>

## Selecting specific data layers

Next, select the layer of interest listed under 'Title' and press 'Add' button (Figure 2). Note that it may take some time until the system fetches all points for the global coverage. Be aware that you are working online and that some layers have over a million records.

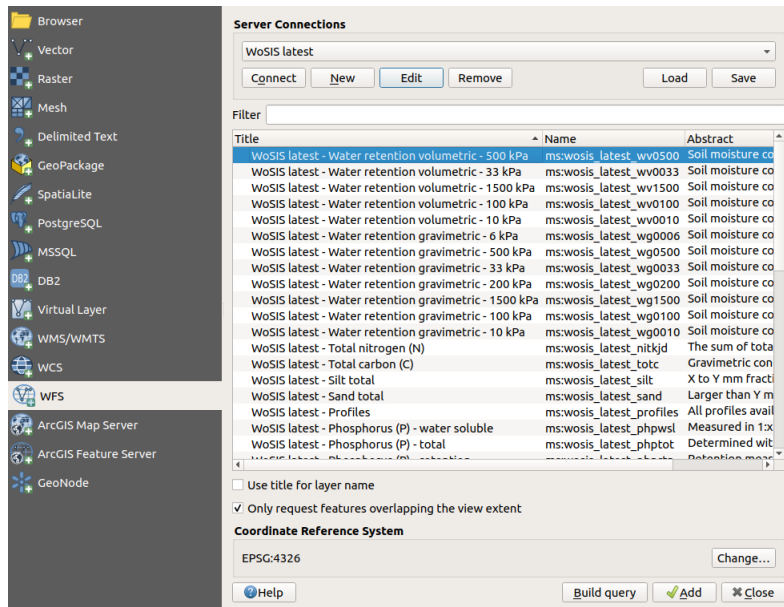


Figure 2. Selecting a WFS layer.

## Selecting point data for a specific area

A more efficient approach to accessing the data would be to request only the points for a specific area. In this case, first zoom to the area of interest and then tick on 'Only request features overlapping the current view extent'.

Another option, when adding the layer, is to click on the 'Build query' button and, for example, in the SQL statement box add the following 'WHERE' clause, like this: WHERE country\_name='Brazil'. Note that the example in Figure 3 considers the layer for pHaq (i.e., pH measured in water or 'wo sis\_ latest\_ phaq').

The complete SQL statement should look like this:

```
SELECT * FROM wosis_latest_phaq WHERE country_name='Brazil'.
```

The screenshot shows a web-based SQL query interface. The 'SQL Statement' field contains the query: `SELECT * FROM wosis_latest_phaq WHERE country_name='Brazil'`. The 'Columns' field is empty. The 'Table(s)' field contains 'wosis\_latest\_phaq'. The 'Where' field contains 'country\_name = 'Brazil''. The 'Order by' field is empty. The interface includes buttons for 'Help', 'Reset', 'Cancel', and 'OK', and dropdown menus for 'Data', 'Functions', 'Spatial predicates', and 'Operators'.

Figure 3. Filter records for  $pH_{aq}$  from Brazil using SQL.

## Saving your results

After loading the desired data selection, you can save it as a shape file (or other format) on your local machine for further offline use, for example processing the data using R.

## Concluding remarks

Regularly check for updates when using the WFS option because 'wosis\_latest' is a *dynamic* dataset (see [FAQ – WoSIS](#)). Contents are prone to change when new profiles have been added or some corrections were made.

## References

- Batjes NH, Ribeiro E and van Oostrum AJM 2019. Standardised soil profile data for the world (WoSIS snapshot - September 2019). *ISRIC WDC-Soils* <https://dx.doi.org/10.17027/isric-wdcsoils.20190901>
- Calisto L 2023. ISRIC GraphQL web services for WoSIS and ISIS data access, ISRIC - World Soil Information. <https://graphql.isric.org/>
- Ribeiro E, Batjes NH and Van Oostrum AJM 2018. *World Soil Information Service (WoSIS) - Towards the standardization and harmonization of world soil data. Procedures Manual 2018*. ISRIC Report 2018/01, ISRIC - World Soil Information, Wageningen, 166 p. <http://dx.doi.org/10.17027/isric-wdcsoils.20180001>

