

## OGC SERVICES - WFS

Web Feature Service (WFS) is a geospatial data manipulate interface based on HTTP protocol provided by OGC (Open Geospatial Consortium). Web Feature Service allows a client to retrieve geospatial data encoded in Geography Markup Language (GML) and it supports insert, update, delete, query and discovery operations on geographic features using HTTP as the distributed computing platform.

### 1. URL list

WFS gives clients access to geographic features without storing a local copy of the dataset. Using a specially structured http request, you can call a dataset into your GIS software application.

#### 1.1. Mediterranean Sea and Black Sea scale

Elevation

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/Elevation\\_37/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/Elevation_37/MapServer/WFSServer?)

Sea regions

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/SeaRegions\\_38/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/SeaRegions_38/MapServer/WFSServer?)

Maritime units

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/MaritimeUnits\\_39/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/MaritimeUnits_39/MapServer/WFSServer?)

Socioeconomics

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/Socioeconomics\\_45/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/Socioeconomics_45/MapServer/WFSServer?)

Threats

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/Threats\\_47/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/Threats_47/MapServer/WFSServer?)

Geology

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/Geology\\_46/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/Geology_46/MapServer/WFSServer?)

Oceanography

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/Oceanography\\_43/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/Oceanography_43/MapServer/WFSServer?)

Biodiversity

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/Biodiversity\\_51/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/Biodiversity_51/MapServer/WFSServer?)

Habitat suitability

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/HabitatSuitability\\_48/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/HabitatSuitability_48/MapServer/WFSServer?)

Habitat and biotopes

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/HabitatsAndBiotopes\\_40/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/HabitatsAndBiotopes_40/MapServer/WFSServer?)

Offshore Wind Farm

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/OffshoreWindFarms\\_60/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/OffshoreWindFarms_60/MapServer/WFSServer?)

Protected sites

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/ProtectedSites\\_44/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/ProtectedSites_44/MapServer/WFSServer?)

#### 1.2. Pilot project areas scale

Elevation

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/Elevation\\_53/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/Elevation_53/MapServer/WFSServer?)

Oceanography

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/Oceanography\\_58/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/Oceanography_58/MapServer/WFSServer?)

Habitat mapping

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/HabitatMapping\\_57/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/HabitatMapping_57/MapServer/WFSServer?)

Connectivity

[http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published\\_moka/Connectivity\\_59/MapServer/WFSServer?](http://gismarblack.bo.ismar.cnr.it:6080/arcgis/services/published_moka/Connectivity_59/MapServer/WFSServer?)

## 2. How to use WFS services

To connect to a WFS, select and copy a WFS link and paste the link where your software asks to specify a WFS URL. The next two paragraphs show how import WFS services in ArcGIS (ESRI) and QGIS (Free and Open source).

### 2.1. ArcGIS

To use WFS and GML content in ArcGIS for Desktop, you need to install the Data Interoperability extension and add an Interoperability Connection to the WFS service (<https://desktop.arcgis.com/en/desktop/latest/map/web-maps-and-services/adding-a-wfs-service-to-arcmap.htm>).

- In ArcMap, click the “Add data” button to add a new map layer
- Click the Look in drop-down menu and click “Interoperability Connections”
- Choose a WFS service from your list of WFS connections to add the service's contents as a feature layer.

### 2.2. QGIS

- Click "Add WFS Layer" button
- Choose "New"
- In the window that opens (Fig1), copy/paste the WFS URL link and click OK
- Click “Connect” and once the Layers window is populated, select the layer(s) of interest and click ADD (Fig2).

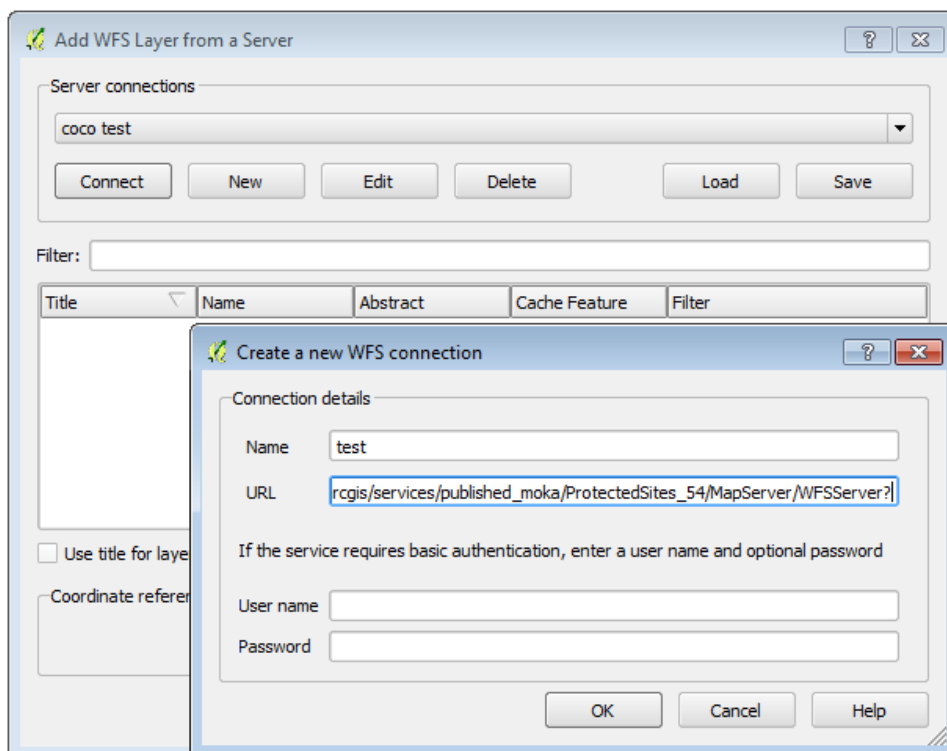


Fig1. “Create a new WFS connection” window.

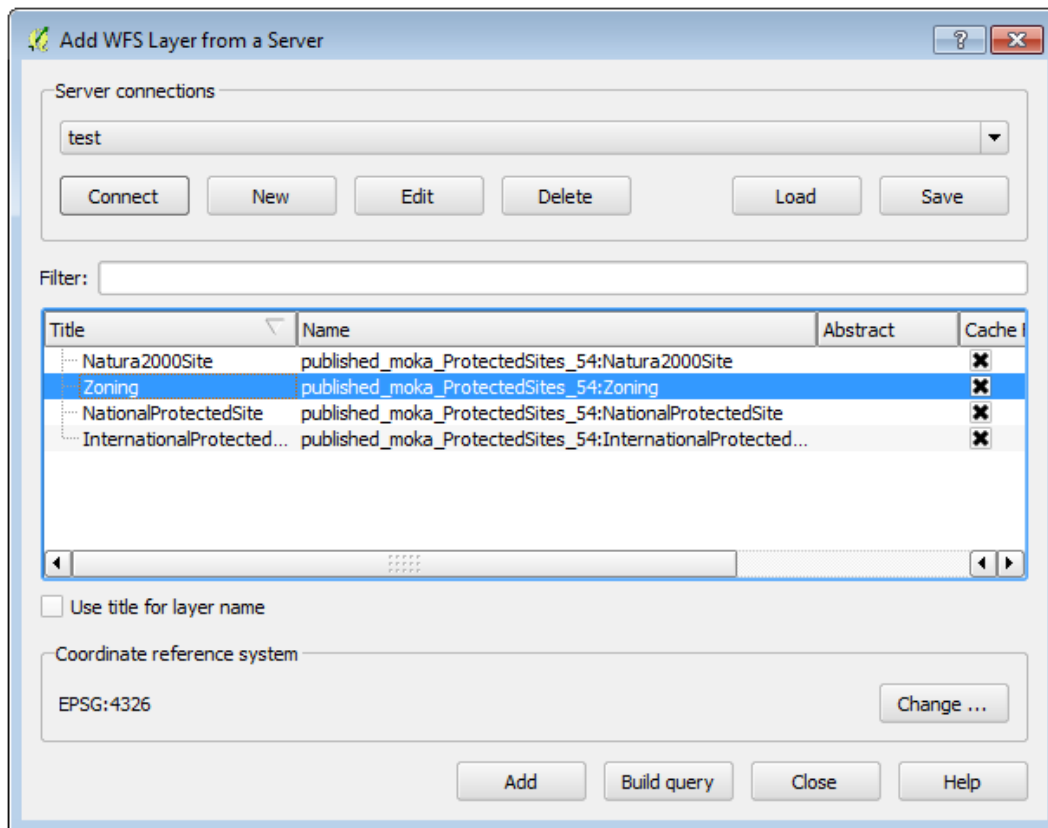


Fig2. "Add WFS Layer from a Server" window.