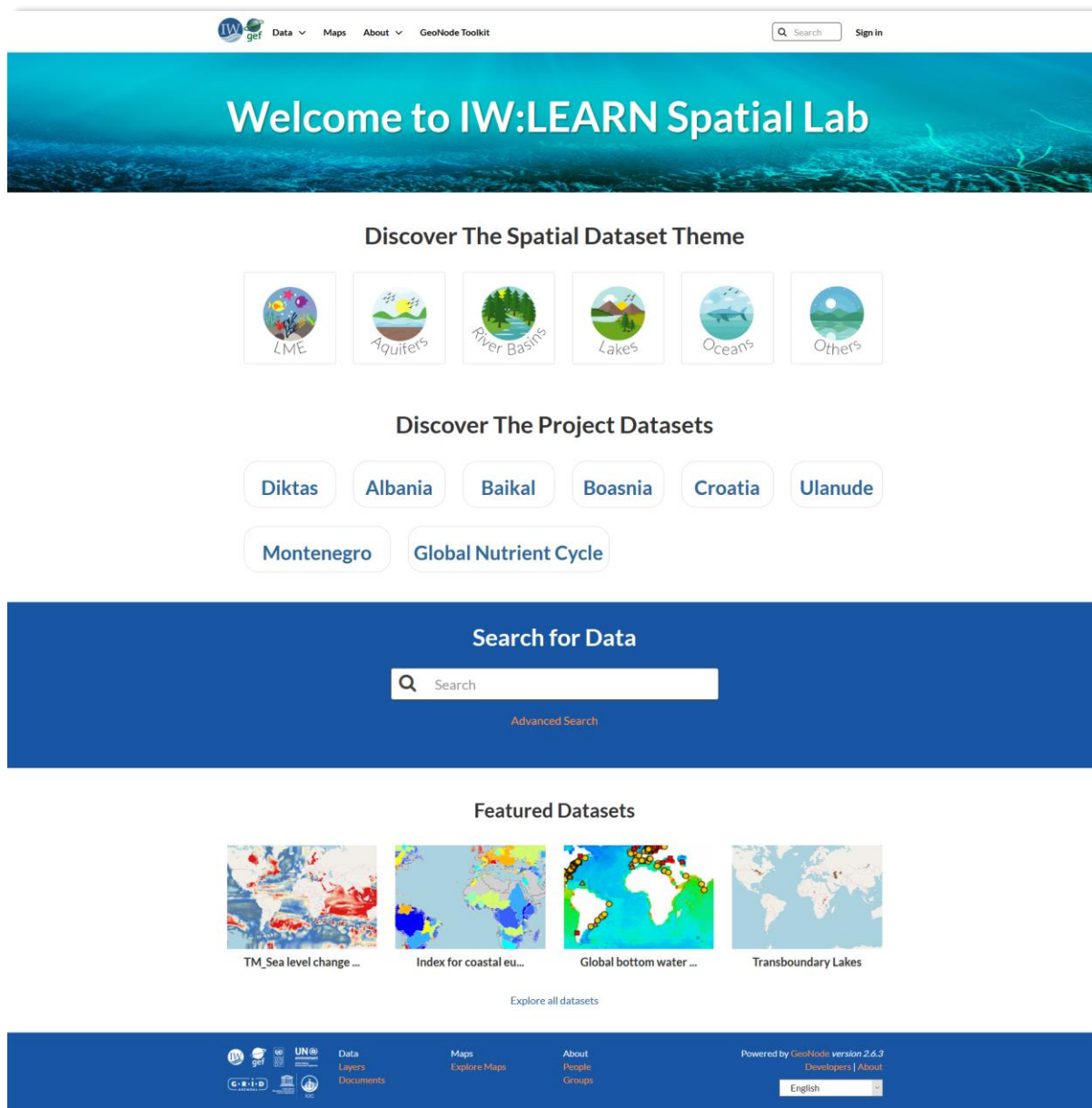


IW:LEARN Spatial Lab guidelines – May 2019



The screenshot shows the homepage of the IW:LEARN Spatial Lab website. At the top, there is a navigation bar with the IW and gef logos, links for Data, Maps, About, and GeoNode Toolkit, a search bar, and a Sign In button. Below the navigation bar is a large blue banner with the text "Welcome to IW:LEARN Spatial Lab". Underneath the banner, there is a section titled "Discover The Spatial Dataset Theme" with six circular icons representing different themes: LME, Aquifers, River Basins, Lakes, Oceans, and Others. Below this is a section titled "Discover The Project Datasets" with eight rounded rectangular buttons for Diktas, Albania, Baikal, Boasnia, Croatia, Ulanude, Montenegro, and Global Nutrient Cycle. The next section is a blue bar titled "Search for Data" with a search input field and a link to "Advanced Search". Below this is a section titled "Featured Datasets" with four map thumbnails and their corresponding titles: TM_Sea level change ..., Index for coastal eu..., Global bottom water ..., and Transboundary Lakes. At the bottom of the featured datasets section is a link to "Explore all datasets". The footer contains various logos (IW, gef, UN, GRI, etc.), links for Data (Layers, Documents), Maps (Explore Maps), and About (People, Groups), a note about being powered by GeoNode version 2.6.7, and a language selector set to English.

<http://geonode.iwlearn.org/>

About the IW:LEARN Spatial Lab

GEF International Waters projects collect and use a range of spatial data in the development of their Transboundary Diagnostic Analysis (TDA) and the development and implementation of their Strategic Action Programme (SAP). Recognising the need to support GEF IW projects in their data management, the IW:LEARN project has established the IW:LEARN Spatial Lab to support projects in their spatial data storage and sharing.

The IW:LEARN Spatial Lab is built on open source technology (www.geonode.org). It allows users to upload and share their spatial data, develop standardised metadata, search for other relevant spatial data, make and share interactive maps, and serve their data as web services.

This guide provides an overview of how to use IW:LEARN Spatial Lab.

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1. IW:LEARN guidelines for storing spatial data

The GEF International Waters (IW) focal area's specific mandate is to support transboundary cooperation in shared marine and freshwater ecosystems. Since the inception of the GEF in the early 1990s, the IW portfolio has delivered substantive results and replicable experiences in integrated water resource management to be scaled-up and mainstreamed globally. The portfolio operates in transboundary water systems, such as shared river basins, lakes, groundwater and large marine ecosystems, fostering cooperation among various partners and stakeholders in addressing complex and long-lasting marine resource and/or freshwater-use conflicts and achieving long-term benefits.

IW:LEARN is the Global Environment Facility's (GEF) International Waters Learning Exchange and Resource Network. The IW:LEARN project was established to strengthen transboundary water management around the globe by collecting and sharing best practices, lessons learned, and innovative solutions to common problems across the GEF International Waters portfolio. It promotes learning among project managers, country official, implementing agencies, and other partners.

The IW:LEARN Spatial Lab provides a customizable mapping tool for the GEF International Waters (IW) portfolio. It supports the storage, and visualization of project spatial data. It also supports the long term archiving and retrieval of spatial data beyond the duration of a GEF IW project. The following principles should guide GEF IW projects in storing their spatial data.

Spatial data should be stored in a long-term stable platform (either hosted within a regional institution or on the IW:LEARN Spatial Lab)

All data should have appropriate metadata to allow users to search and understand the source and use of the data

All data collected in GEF IW projects should be open and accessible – collect once, use multiple times

Spatial data should be stored in an electronic, standard format so that it can be easily accessed.

Storing project data in the IW:LEARN Spatial Lab achieves all these principles.

2. Registering as a user

The IW:LEARN Spatial Lab does not require registration to search and view spatial data. However, you will need to register as a user in order to upload and manage your project spatial data.

The IW:LEARN team will then set up your new user account and provide you with a username and

To register as a user please send an email to iwlearn@grida.no and provide your name and IW project name.

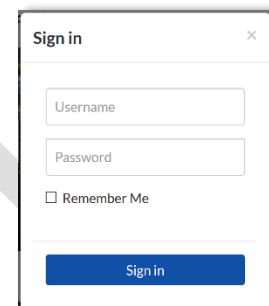
temporary password. The password should be changed on first sign in (see below).

3. Sign in and user profile

To sign in to the IW:LEARN Spatial Lab click on the **Sign in** link on the top right of the page.

Enter your Username and Password supplied by the IW:LEARN team. Your Username will now be displayed in the top right corner where the **Sign in** link used to be.

To view your profile click on your **Username** and select the top entry, **Profile**. The profile section allows you to view and edit your profile, change your password and view your content (layers and maps).



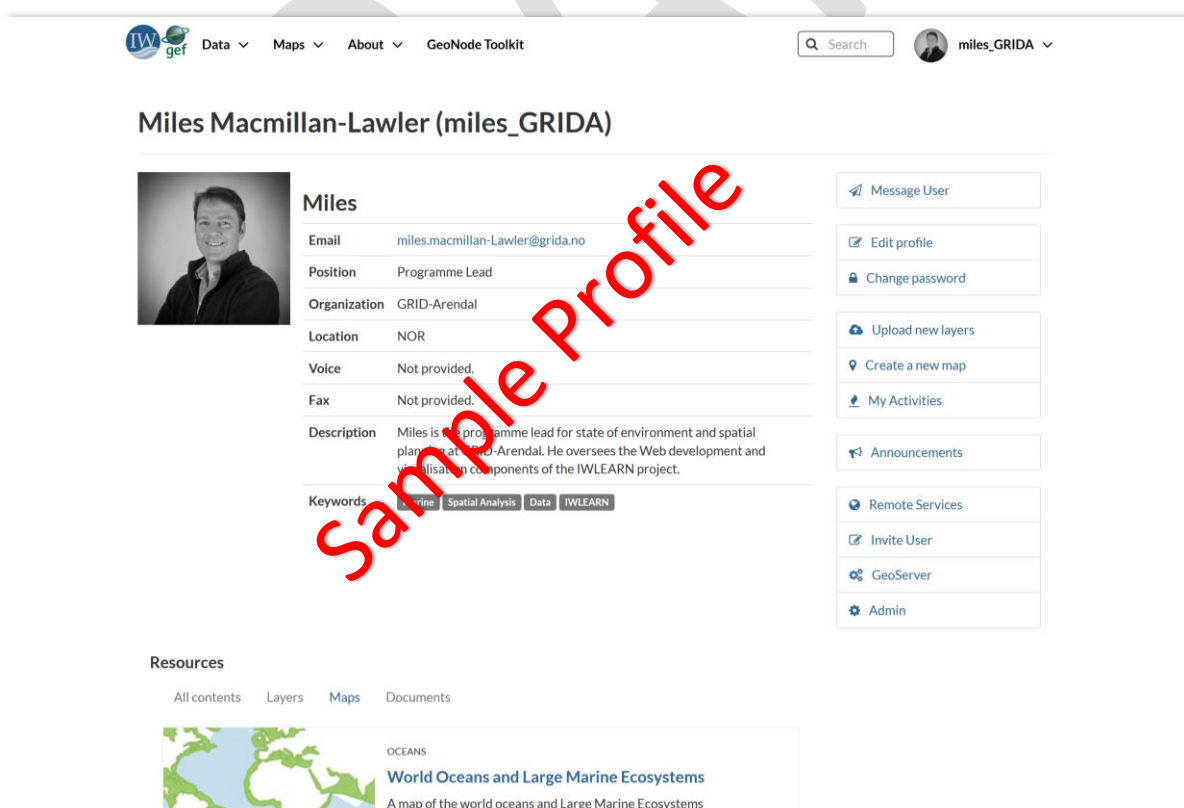
Sign in

Username

Password

☐ Remember Me

Sign in



Miles Macmillan-Lawler (miles_GRIDA)

Miles

Email: miles.macmillan-Lawler@grida.no

Position: Programme Lead

Organization: GRID-Arendal

Location: NOR

Voice: Not provided.

Fax: Not provided.

Description: Miles is the programme lead for state of environment and spatial planning at GRID-Arendal. He oversees the Web development and visualisation components of the IWLEARN project.

Keywords: [Science](#) [Spatial Analysis](#) [Data](#) [IWLEARN](#)

[Message User](#)

[Edit profile](#)

[Change password](#)

[Upload new layers](#)

[Create a new map](#)

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[Invite User](#)

[GeoServer](#)

[Admin](#)


Resources


[All contents](#) [Layers](#) [Maps](#) [Documents](#)

OCEANS

World Oceans and Large Marine Ecosystems

A map of the world oceans and Large Marine Ecosystems

 Edit profile

 Change password

To edit your profile click on the **Edit profile** button

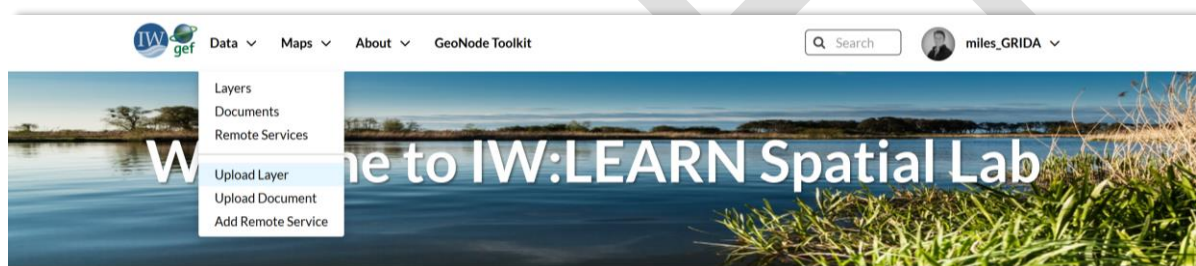
To change your password click on the **Change password** button. You should change your password the first time you sign in.

4. Uploading spatial data

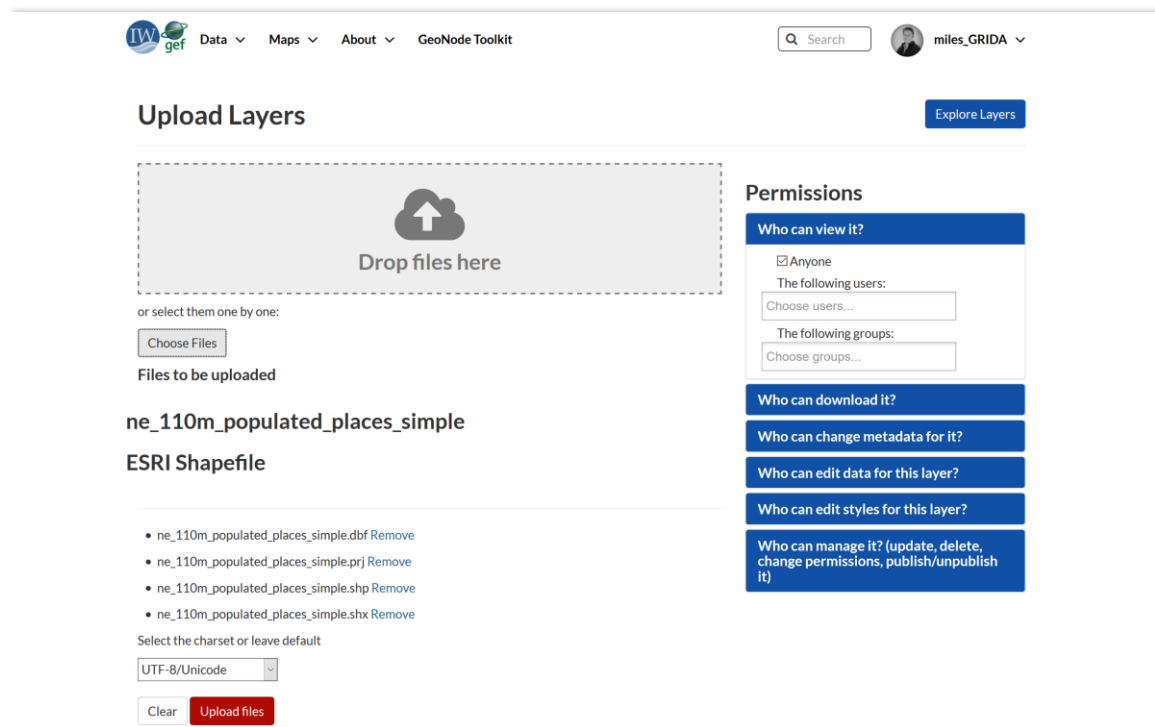
Uploading your IW project spatial data to the IW:LEARN Spatial Lab is simple using the drag and drop interface. Most common spatial data formats can be uploaded directly into the Spatial Lab (for example ESRI shapefiles, geotiff, etc). The following points should be noted:

- To upload spatial data you must sign in to the Spatial Lab
- The most common format to upload is the ESRI shapefile format. The upload must include the following four files **.shp**, **.dbf**, **.prj**, **.shx**
- Geonode accepts a wide range of projections, however it is recommended to use the **EPGS: 4326** projection system (WGS84)
- Uploading raster data is best done in geotiff format, e.g. **.tif** extension
- Large or complex data sets should be cleaned and optimised prior to uploading (contact iwlearn@grida.no for assistance)

To upload your data select **Upload Layer** from the **Data** menu.



This opens the **Upload Layers** interface. Here you can either drag and drop (**Drop files here**) your spatial data directly from your file browser or use the **Choose Files** button to select your spatial data. Remember, when uploading an ESRI shapefile you need to include the **.shp**, **.dbf**, **.prj**, **.shx** files. Click the **Upload files** button to start the upload. See appendix 1 for information on use of non-English charsets in your spatial data.



Upload Layers [Explore Layers](#)

Drop files here

or select them one by one:

[Choose Files](#)

Files to be uploaded

ne_110m_populated_places_simple

ESRI Shapefile

- ne_110m_populated_places_simple.dbf [Remove](#)
- ne_110m_populated_places_simple.prj [Remove](#)
- ne_110m_populated_places_simple.shp [Remove](#)
- ne_110m_populated_places_simple.shx [Remove](#)

Select the charset or leave default

UTF-8/Unicode

[Clear](#) [Upload files](#)

Permissions

Who can view it?

☒ Anyone

The following users:

[Choose users...](#)

The following groups:

[Choose groups...](#)

Who can download it?

Who can change metadata for it?

Who can edit data for this layer?

Who can edit styles for this layer?

Who can manage it? (update, delete, change permissions, publish/unpublish it)

Once the upload is completed, a message will appear informing you that the upload was successful. The next step is to edit the layer metadata using the orange **Edit Metadata** button.

The next section will explain the different metadata fields and provide guidance on what is required for each.

ne_110m_populated_places_simple ESRI Shapefile

- ne_110m_populated_places_simple.dbf [Remove](#)
- ne_110m_populated_places_simple.prj [Remove](#)
- ne_110m_populated_places_simple.shp [Remove](#)
- ne_110m_populated_places_simple.shx [Remove](#)

Your layer was successfully uploaded

[Layer Info](#)

[Edit Metadata](#)

[Manage Styles](#)

5. Metadata guidelines

Metadata is used to describe a layer, it provides information on how the layer was created, its intended use and can be used to help find layer. The IW:LEARN Spatial Lab allows users to create standardised metadata for their layers. This step occurs directly after uploading your spatial data.

The following describes the different metadata fields, and what is required for each field. Note that some of the fields are automatically filled, while others require a manual entry.

It is important to fill in each of the required fields (indicated in the table below), as these will help to both search and structure the layer in the Spatial Lab. Appendix 2 provides additional information on metadata.

Edit Metadata

Editing details for geonode:ne_110m_populated_places_simple

Update

Owner

miles_GRIDA

Title

populated places from Natural Earth

Date

2018-05-24 12:00 AM

Date type

Revision

Edition

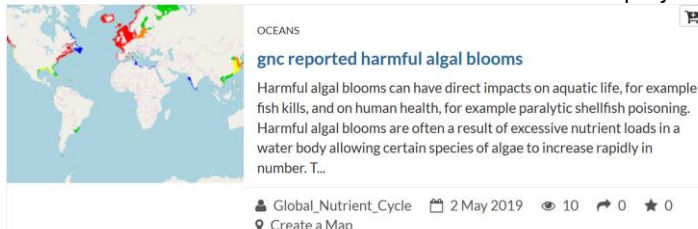
4.1.0

Abstract

This data comes from Natural Earth small scale data 1:110m (<https://www.naturalearthdata.com/>).

Point symbols with name attributes. Includes all admin-0 capitals and some other major cities. We favor regional significance over population census in determining our selection of places. Use the scale rankings to filter the number of towns that appear on your map.

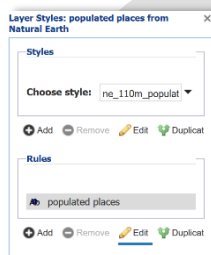
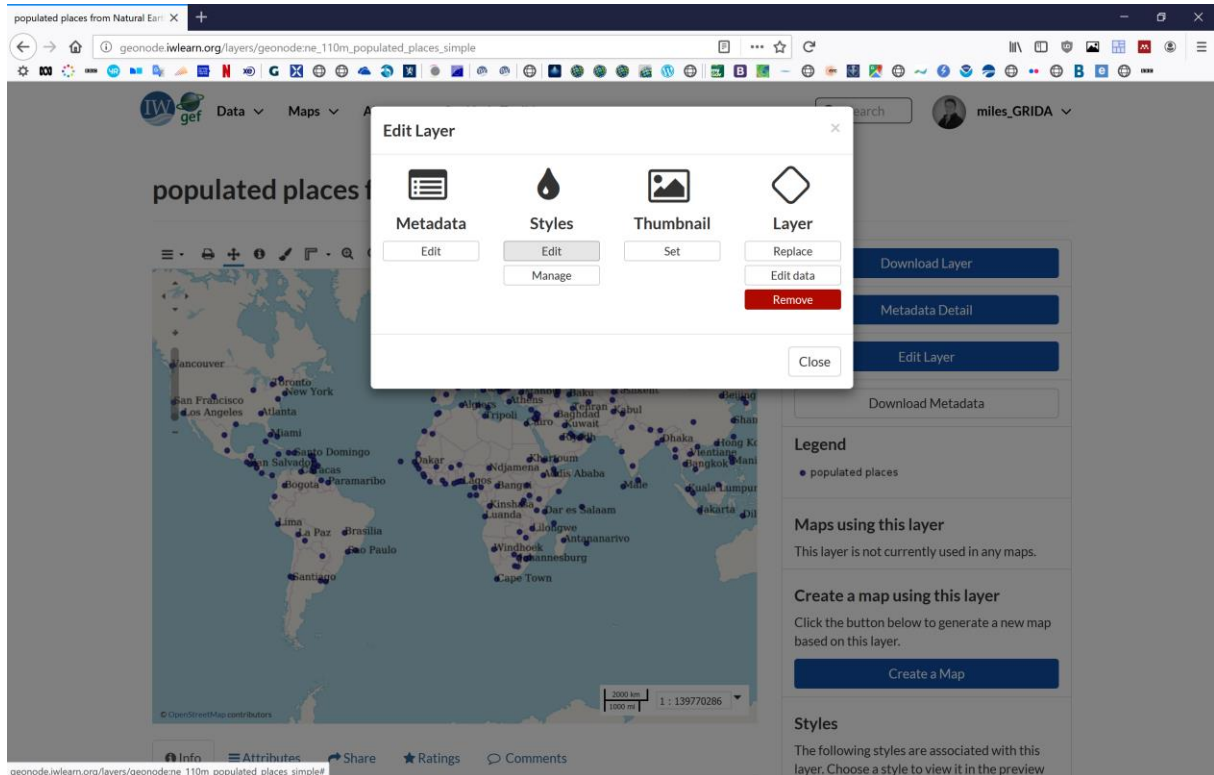
How you name your data is important! Include a short standardised prefix to the name of all your data so that it can be easily associated with the project. For example, include the project acronym, country or basin at the start of each name.

Field	Description	Required
Owner	Automatically filled in (whoever uploaded the layer)	-
Title	<p>Default is the uploaded layer name.</p> <p>Best practice is to change to something short and easily understood if it is not already.</p> <p>For IW project data it is good practice to include the project acronym or country/region at the start of the name.</p> <p>e.g. for the Global Nutrient Cycle project 'gnc' was included at the start of the name to make it clear the data was from this project.</p> 	Yes
Date	Default is publication date (date of upload), it can be changed to match either creation, publication or revision date.	Yes
Date type	<p>Creation – when the layer was created</p> <p>Publication – when the layer was published</p>	Yes

	Revision – when the layer was revised	
Edition	If there are multiple versions of the layer enter the edition here	
Abstract	Brief narrative summary of the content of the resource(s) Include what the layer shows, who collected it, how it was collected and any reference.	Yes
Purpose	Summary of the intention with which the resource(s) was created What is its intended use? so that other users understand its use.	Yes
Maintenance frequency	Frequency with which the layer is updated – select from a drop down list	Yes
Tkeywords		
Regions	Select one or more regions – use Ctrl-click to select multiple values. The list includes global, regions and countries	Yes
Restrictions	Select a restriction from the drop down list if applicable	
Restrictions other	Add additional specific restrictions on the data use	
License	Pick a license from the drop down list	Yes
Language	Select the language of the Layer – default is English	Yes
Spatial representation type	For vector data use vector data is used to represent geographic data For raster data use grid data is used to represent geographic data	Yes
Temporal extent start	If the data covers a specific time period enter the start time	
Temporal extent end	If the data covers a specific time period enter the end time	
Supplemental information	Enter any other descriptive information	
Data quality statement	Description of the quality of the layer including the lineage of the layer	Yes
Metadata upload preserve	Use this option if metadata was already uploaded as an xml file	
Featured	Select this if you would like the layer featured on the front page	
Is Published	By default all layers are published, this can be used to unpublish a layer, it will still be in the system, but not visible to users	
Thumbnail url	A link to the thumbnail stored in the system, automatically created on upload	
In mosaic	Check if a mosaic data set	
Has time	Check if layer has a time component	
Has elevation	Check if layer is an elevation data set	
Time regex	Set the time format	
Elevation regex	Set the elevation format	
Keywords	Enter keywords for the layer. As a guide, pick 3 – 5 key words. It is useful to include the project acronym as one these. Keywords aid in searching for layers	Yes
Point of Contact	Default is user who uploaded	
Metadata Author	Default is user who uploaded	
Category (Lakes/Other/Imagery Base Maps Earth Cover/Economy/	Choose the category for the layer. Only one category can be chosen per layer. The five basin types (Lakes, Oceans, Aquifers, River Basins and Large Marine Ecosystems) are included in the list	Yes
Attributes	This shows the attributes of the layer that will be displayed. Labels and descriptions can be added here.	

6. Styling a layer

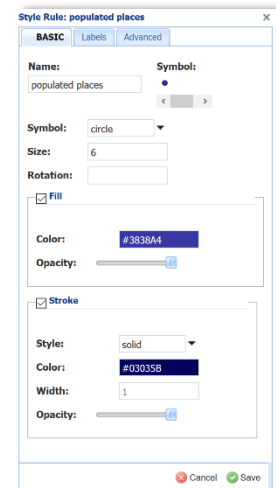
When layers are uploaded to the IW:LEARN Spatial Lab, they are assigned a default style corresponding to the layers name. This style can be changed from a layer's information page. To view a layer's information page select **Layers** from the **Data** menu, then click on the layer from the list, or use the search and filters on the left to find the layer. Note that every layer has a unique URL which can be used to quickly access the layer or shared with a colleague (e.g. geonode.iwlearn.org/layers/geonode:ne_110m_populated_places_simple).



Clicking the **Edit Layer** button on this page will bring up a dialogue to edit various aspects of the layer (**Metadata, Style, Thumbnail, Layer**).

Click the **Edit** button under **Styles** to edit the layers style. A new dialogue opens (shown to the left). A layer can have several different styles associated with it.

Different styles can be chosen using the **Choose style** drop down list. By default all layers will have a single style when first uploaded. The user can create new styles. **Rules** are used to set the symbol and colour of a layer. To change a default style click on the style name in the **Rules** section and click edit. This opens the **Style Rule editor** (shown on the right).

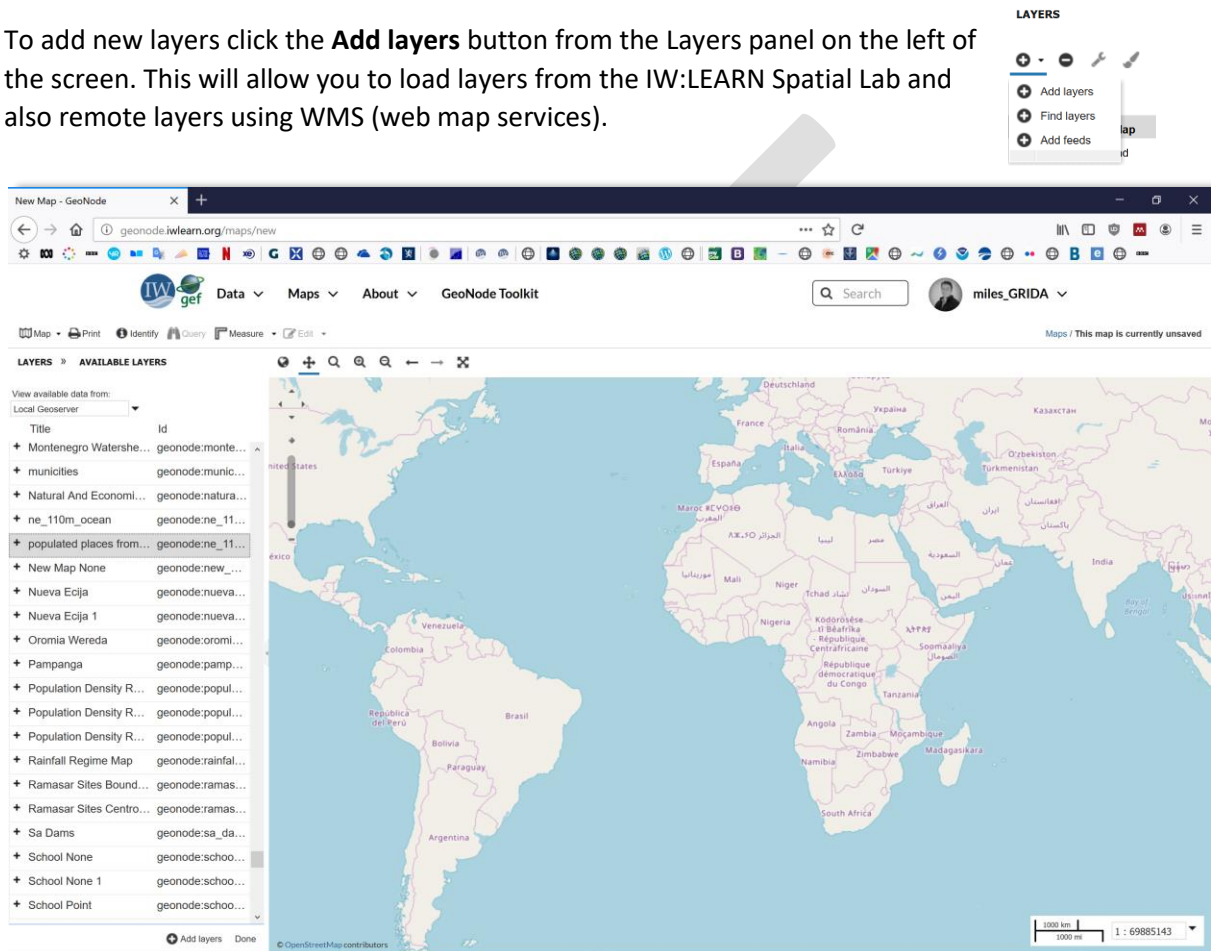


This **Style Rule editor** allows you to change the symbol and colour of the layer, and edit the name that will show in the legend. There are also tabs to edit **Labels** and **Advanced** filters. Once you have adjusted the symbol and colour on the **BASIC** tab click save to store the new style with the layer.

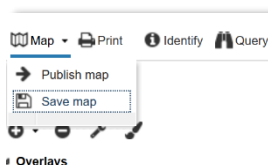
7. Creating and sharing interactive maps

The IW:LEARN Spatial Lab allows users to create interactive maps, share these, or embed them in a web page. The following section provides guidance on the steps to create interactive maps. Maps can be created from **Create Maps** under the **Maps** menu, or using the **Create a Map** button on the layer information page. This brings up a new empty map window (or in the latter case with the selected layer included).

To add new layers click the **Add layers** button from the Layers panel on the left of the screen. This will allow you to load layers from the IW:LEARN Spatial Lab and also remote layers using WMS (web map services).



Select the layers to add to the map, use control key to select multiple layers. Click the Add layers button to **Add layers**, and **Done** when finished. The layers are now shown on the map. The map controls in the top left of the map frame can be used to pan and zoom the map to select a target area. Once the map is finished it can be saved and shared-



The map can be saved and shared from the Map menu button. The **Save map** option allows you to give the map a **Title** and **Abstract** (description). These are used in the system to search and catalogue the map. The Publish map windows does the same, but then brings up

an additional window with that allows the user to create a custom iframe to embed the map in a webpage.

As with layers, each map has a unique URL which can be shared (e.g. <http://geonode.iwlearn.org/maps/4366>)



8. Additional Resources

Additional training resources, including video tutorials, are available in the IW:LEARN Spatial Lab.

<http://geonode.iwlearn.org/toolkit/tutorial/>

Appendix 1: ISO Character sets supported by the IW:LEARN Spatial Lab

Support for shapefiles with non-English character sets is provided in the Spatial Lab. This can be changed in the **select charset** drop down menu. For shapefiles with only English characters the default is fine (UTF-8/Unicode).

- Latin1/ISO 8859-1 Western Europe
- Latin2/ISO 8859-2 Western and Central Europe
- Latin3/ISO 8859-3 Western Europe and South European (Turkish, Maltese plus Esperanto)
- Latin4/ISO 8859-4 Western Europe and Baltic countries (Lithuania, Estonia, Latvia and Lapp)
- Latin5/ISO 8859-5 Cyrillic alphabet
- Latin6/ISO 8859-6 Arabic
- Latin7/ISO 8859-7 Greek
- Latin8/ISO 8859-8 Hebrew
- Latin9/ISO 8859-9 Western Europe with amended Turkish character set
- Latin10/ISO 8859-10 Western Europe with rationalised character set for Nordic languages, including complete Icelandic set
- Latin13/ISO 8859-13 Baltic languages plus Polish
- Latin14/ISO 8859-14 Celtic languages (Irish Gaelic, Scottish, Welsh)
- Latin15/ISO 8859-15 Added the Euro sign and other rationalisations to ISO 8859-1

Appendix 2: IW:LEARN Spatial Lab Metadata fields

Edit Metadata

Editing details for geonode:ne_110m_ocean

Update

Owner
gridanode

Title
ne_110m_ocean

Date
2018-08-16 03:49 AM

Date type
Publication

Edition

Abstract
No abstract provided

Purpose

It's a user id automatically filled.

Atomically filled based on uploaded file name. If required edit it with meaningful title

Atomically filled based on data upload date

Select the data type event

Provide Data version

Summary of the current data

Don't mix the abstract with purpose. It's basically the intension of the data developed or generated

Maintenance frequency

Data update frequency. The options are self-explanatory

Keywords

avoid this field

Regions

- Burundi
- Comoros
- Djibouti
- Eritrea
- Ethiopia
- Kenya
- Madagascar
- Malawi
- Mauritius
- Mayotte
- Mozambique
- Reunion
- Rwanda
- Seychelles
- Somalia
- Uganda
- United Republic of Tanzania
- North Africa
- Algeria
- Egypt
- Libyan Arab Jamahiriya

Select the related country. Press Ctrl key on keyboard to select multiple country

Restrictions

If data represent any kind of restriction then select the appropriate option.

Restrictions other

If option not covered in the above then can be add more info here.

License

Choose the appropriate license

Language

The language used in the data attribute table or the metadata text

Spatial representation type

For shapefile choose: "Vector data is used to represent geographic data"

For Raster data: "Grid data is used to represent geographic data"

temporal extent start

temporal extent end

Provide the starting and end date if data is temporal in nature

Supplemental information

No information provided

Any other information wish to include about current data

Data quality statement

Information related to data quality

☐ Metadata uploaded preserve

☐ Featured

☒ Is Published

Leave it default

Thumbnail url

<http://geonode.iwlearn.org/uploaded/thumbs/layer-4a52725c-a131-11e8-8d7d-000d3ab6a624-thumb.png>

Leave it default

☐ Is mosaic

☐ Has time

☐ Has elevation

Time regex

Elevation regex

Leave it default

Keywords

Provide some meaningful keyword related to data. Key word is very in important to discover data during searching.

Point of Contact

✖ gridanode

Metadata Author

✖ gridanode

Leave it default

Category

- ☐ Lakes
- ☐ Others
- ☐ Imagery Base Maps Earth Cover
- ☐ Economy
- ☐ Environment
- ☐ Health
- ☐ Geoscientific Information
- ☐ Inland Waters
- ☐ Boundaries
- ☐ Transportation
- ☐ Oceans
- ☐ Climatology Meteorology Atmosphere
- ☐ Aquifers
- ☐ River Basins
- ☐ Society
- ☐ Utilities Communication
- ☐ Biota
- ☐ Elevation
- ☐ Planning Cadastre
- ☐ Large Marine Ecosystems
- ☐ Structure
- ☐ Intelligence Military
- ☐ Location
- ☐ Farming

This field cannot be leave empty and must be choose one option.

Attributes

Attribute	Label	Description	Display Order
the_geom			1
scalerank			2
featurecla			3
min_zoom			4

Update

Leave it default as it is automatically filled from the shapefile .dbf file.

Don't forget to press «update» button at the end.