



Strengthening the National Protected Areas System of Swaziland (SNPAS) Project

Swaziland National Trust Commission- Swaziland Biodiversity Portal Operation Manual



Developed by:

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This guide has been developed for use by Swaziland National Trust Commission (SNTC) and other stakeholders involved in the management of Biodiversity in Swaziland. The website developed for the work is accessible at <http://www.swazibiodiversity.com>.



STRENGTHENING THE NATIONAL PROTECTED AREAS SYSTEM OF SWAZILAND PROJECT

The guide contains step by step explanation on how to perform tasks in the developed biodiversity portal.

The portal is available at <http://portal.swazibiodiversity.com>

For inquiries about this guide contact admin@swazibiodiversity.com

This guide has been developed by [Geo-Envi Solutions International](#) in regard to the developed biodiversity portal developed during the execution of the SNPAS project.

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Introduction

This tutorial provides an overview of SNTC Biodiversity Portal and describes the necessary steps for use, creation, publishing, collaborating and sharing of data, documents and maps on the portal.

Portal Sections

The portal consists of a number of services/sections which include:

Homepage

This section serves as the landing page for the visitors to the portal.

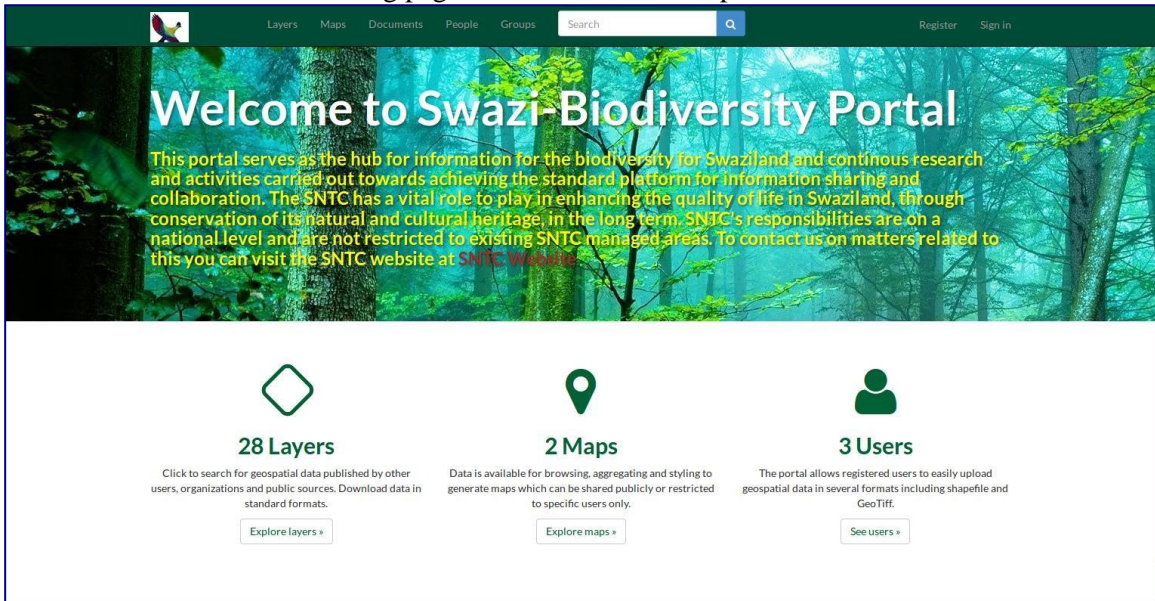


Figure 1: Biodiversity Portal landing page

Maps

This is used for all maps that are all prepared within the portal for publishing or sharing with other system users and the public

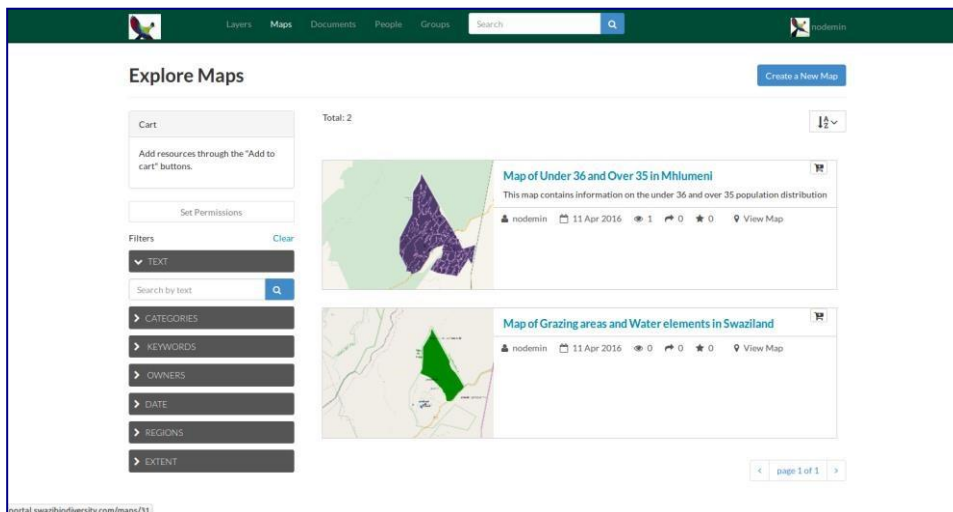


Figure 2: Maps Section in the portal

Documents

All the documents are stored and maintained under this section in the portal.

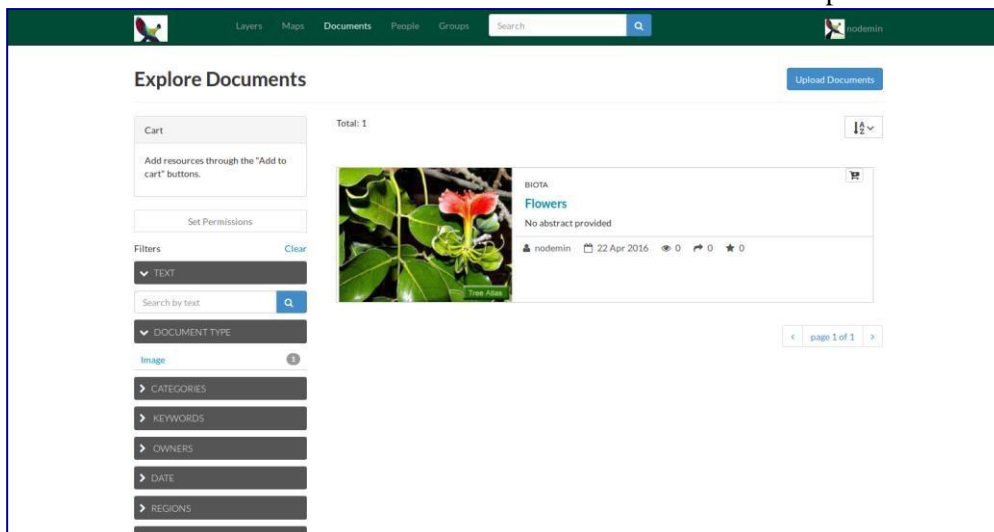


Figure 3: Documents Manager in the portal

Layers

The datasets in the portal can be accessed and edits under this section. This section provides a list of all the available datasets in the system.

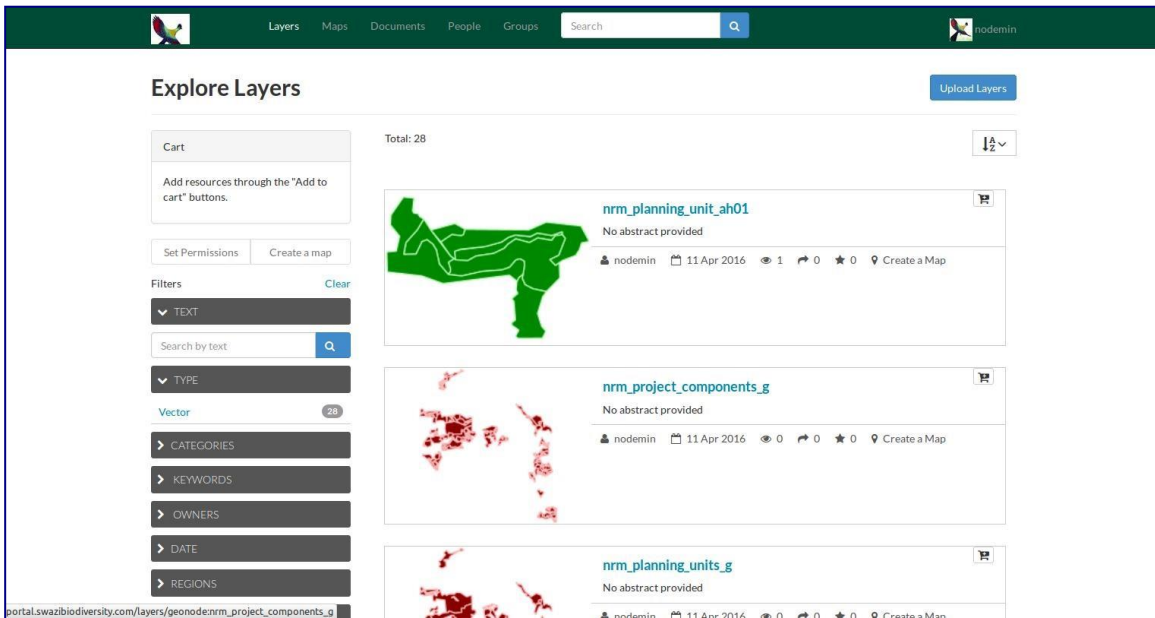


Figure 4: Layers Manager in the portal

People

This section manages the system user information and their roles within the portal.

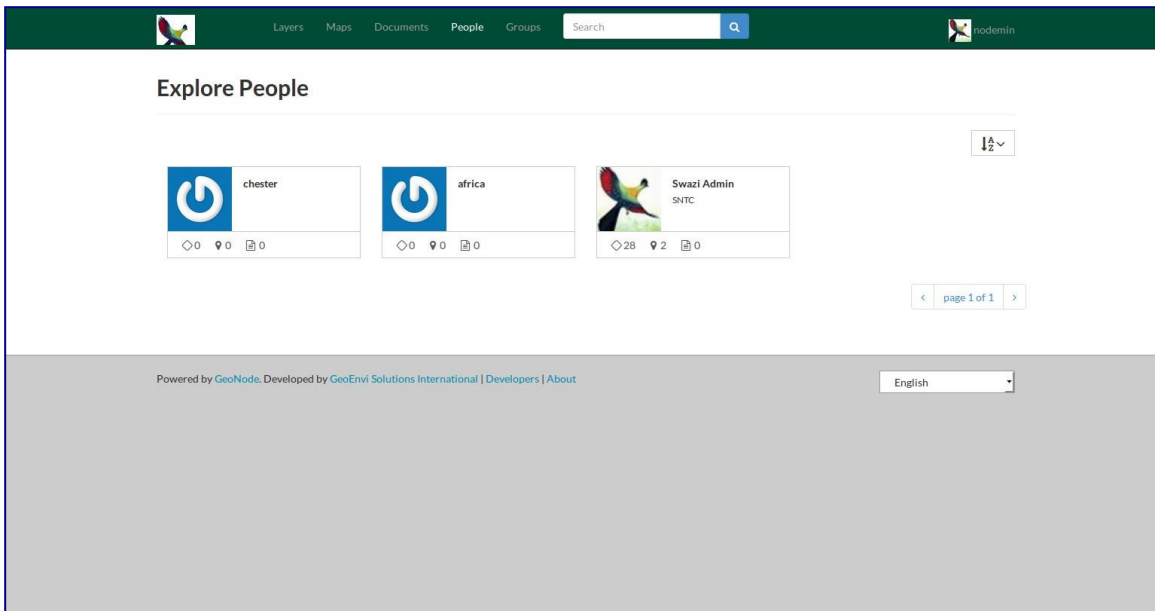


Figure 5: People Section in the Portal

Groups

All the system users in the portal are divided into groups that have different permissions and restriction to act on specific areas of the system.

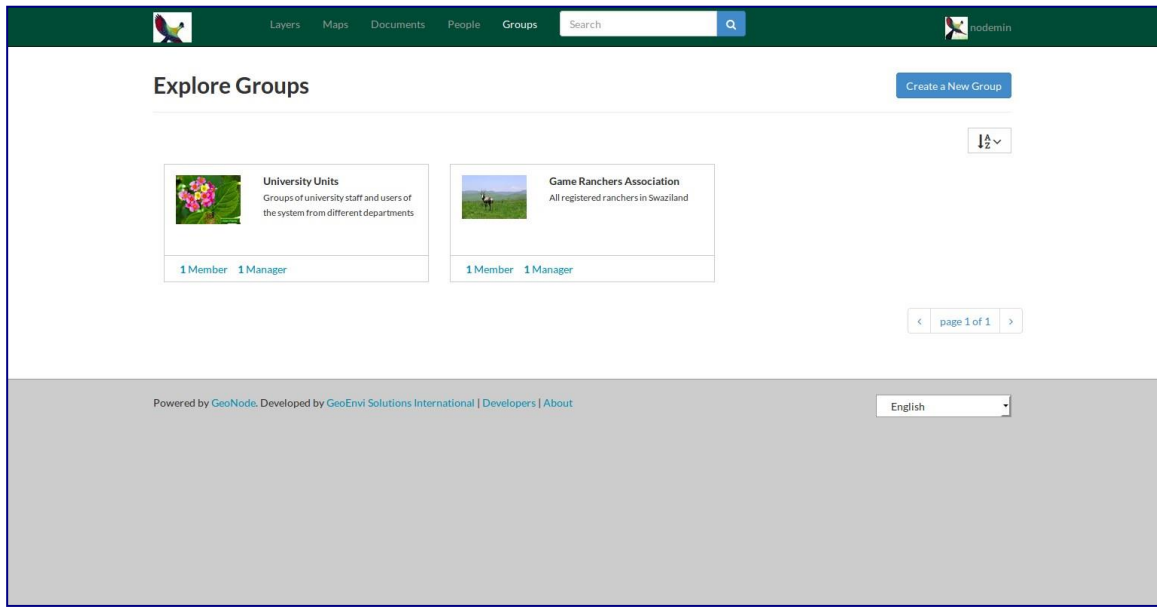


Figure 6: Groups Manager in the system

Register

To act on different areas of the system, one must have an account within the portal. To do this, you register an account in the system to get rights to access information. Registration is done on this section.

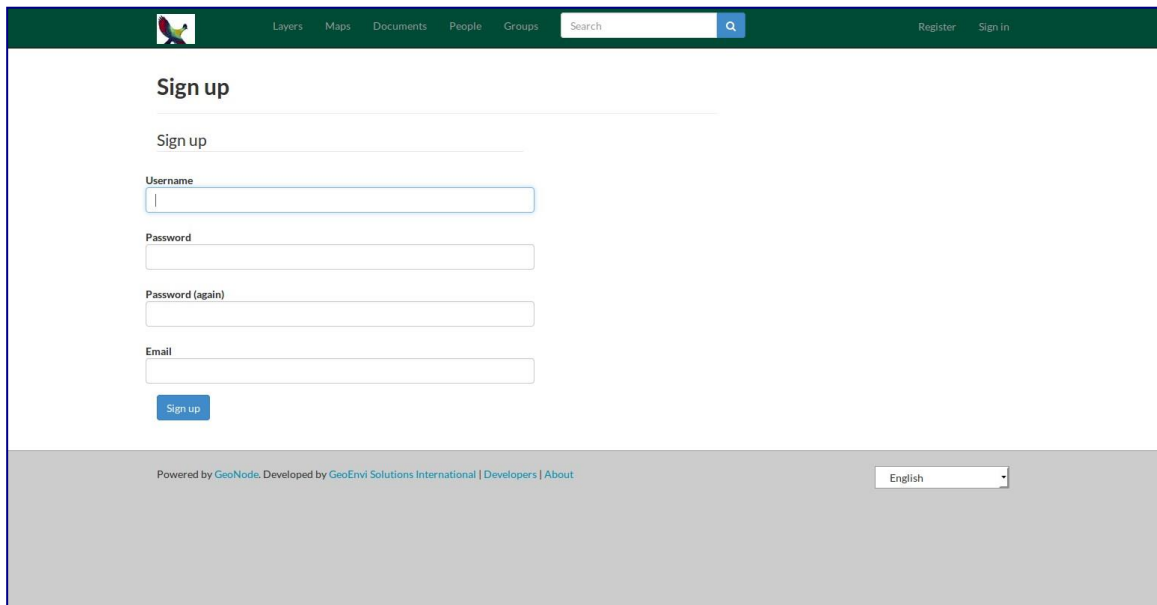


Figure 7: Registration Portal

Login

Once one has registered an account within the portal, login is done in this section.

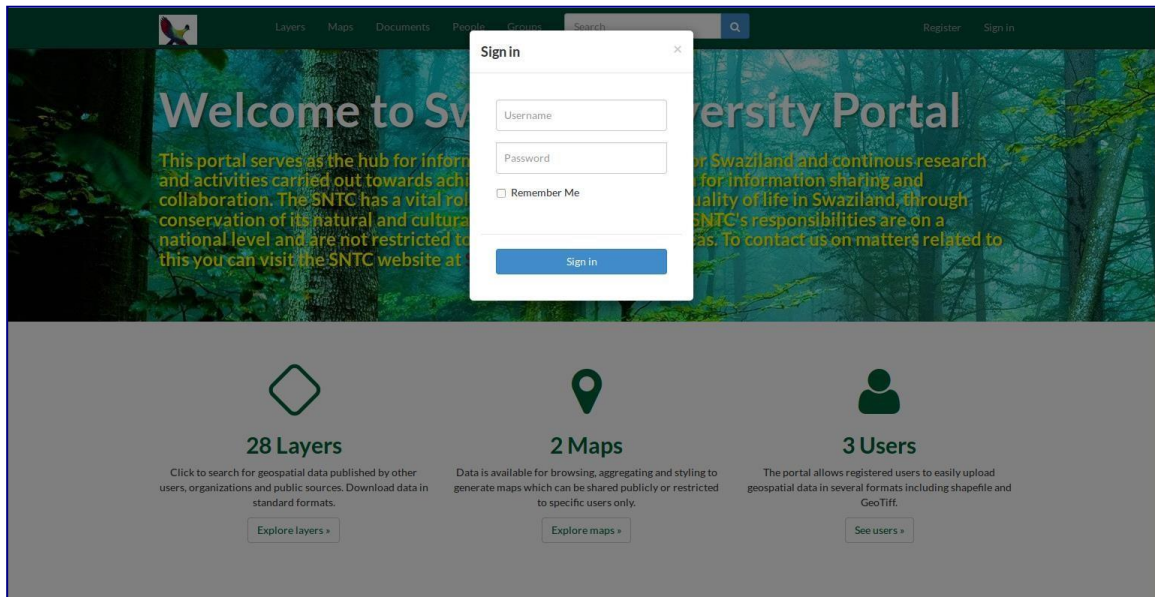


Figure 8: Login Portal

Data/Layer Upload/Manipulation and Removal

The portal allows for data upload, manipulation/editing and deleting of the same data. To perform this operation, one must have a user account in the system and access the “**data upload section**”. Here are the steps for uploading data in the system:

Click on the **Layers** link on the menu to open the layer list section

Click on **Upload Layers** link on the top-right side of the page

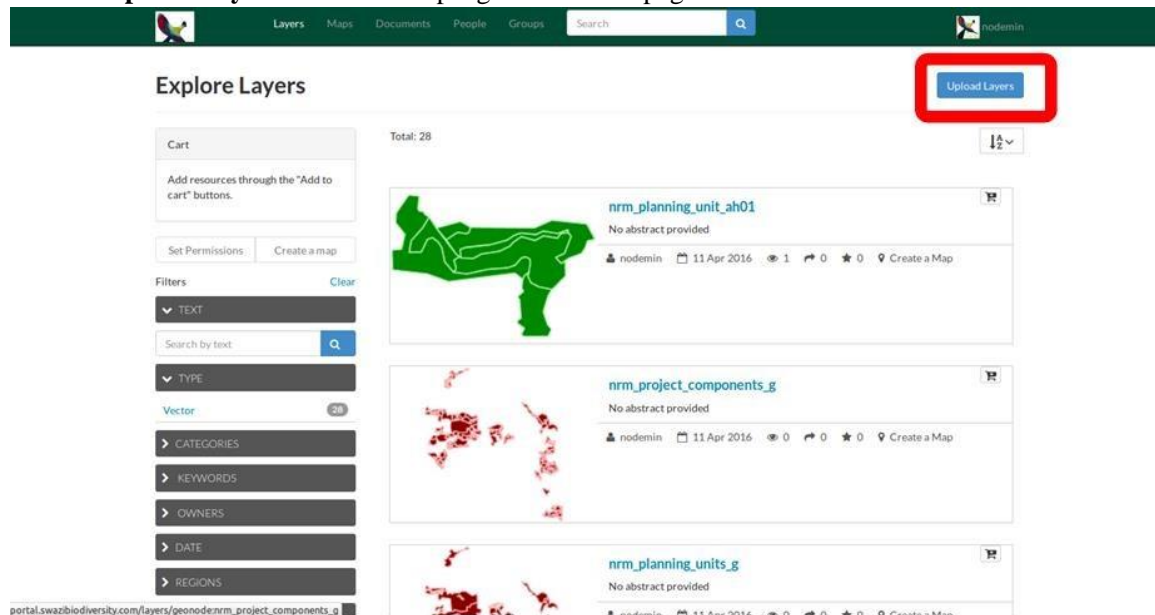


Figure 9: Upload Layer Link

This window opens where you select the files to be uploaded.

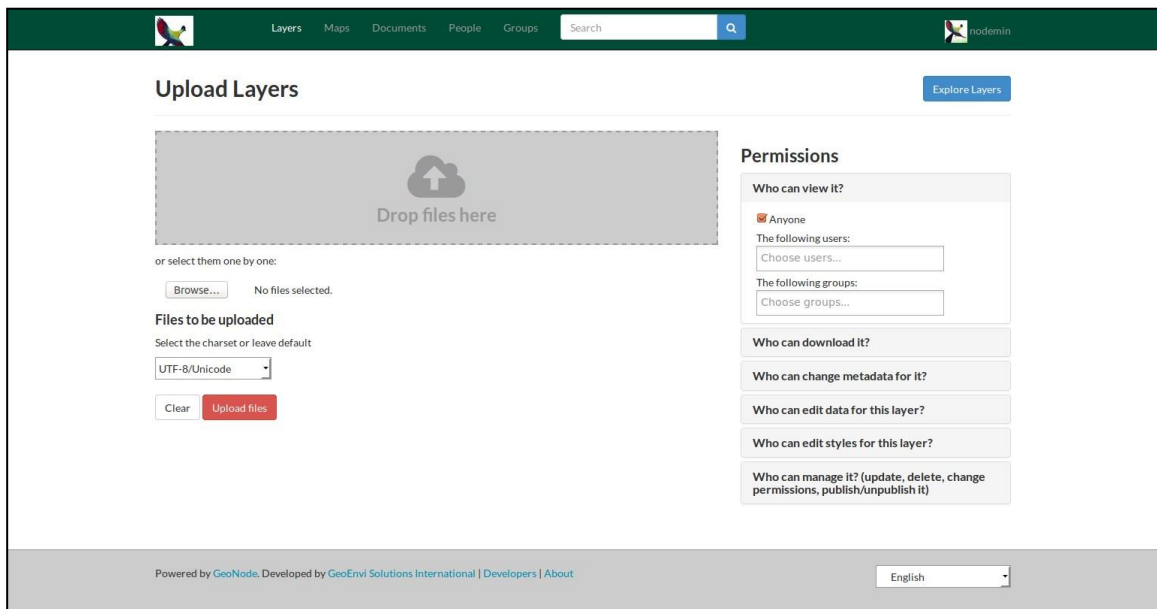


Figure 10: Upload Layer page

The portal provides two methods of data upload, dropping files into the provided area or click on Browse, select files and click open.

Note:

The upload of data action into the portal requires four types of files of a layer i.e. **.shx, .shp, .dbf, .prj**. Thus, for a successful data upload exercise, these four files must be included. After including the four file types, click on **Upload** to upload the files into the system.

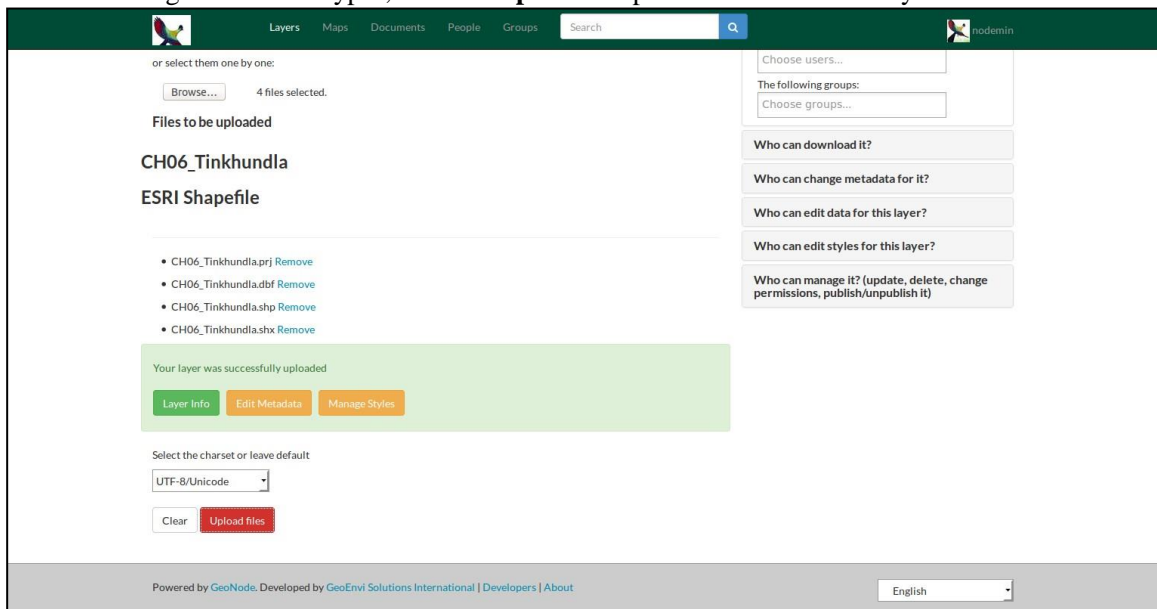


Figure 11: Successful layer upload message

The system also gives the ability to restrict access to uploaded data in the system when uploading the data. The permissions are accessible from the left right side of the page.

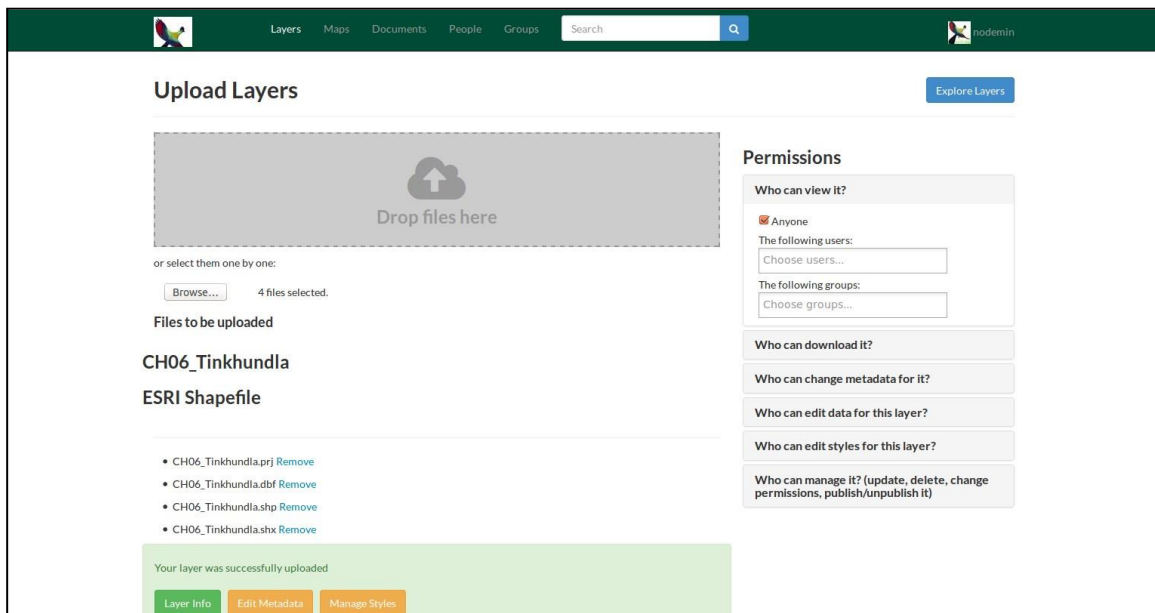


Figure 12: Permissions Options

Permissions

Who can view it?

This permission allows the data owner to restrict the users of the system who can view the data. To be viewed by all users, check the **Anyone** option or type **username** or **group names** that you need to access the data.

Who can download it?

This section gives the *data owner* the option to restrict the users or who can download the data once uploaded in the system. As the permission above, check the **Anyone** option or type **username** or **group names** that you need to access the data.

Who can change metadata for it?

Metadata describes more about data. This permission allows the control of which user can edit the metadata of the uploaded layer.

Who can edit data for this year?

This permission allows the data owner to allow layer data editing for the uploaded layer. To allow everyone to edit the data, type in the **users** and **groups** that can edit the data.

Who can edit styles for this layer?

Every layer has a style that differentiates it from other layers on the map. The system allows for manipulation of the styles at wish and saving the styles for use in other layers. These permissions can be given to specific groups or users or left freely for anyone who needs to change the data.

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

This permission controls the base restrictions on the data by giving super user permission to another user or group in the system by allowing them to update, delete, change permissions, publish or unpublish the data.

Styles

Styles enable the users or data owner to display their data in a look of wish or even to customize layer display on the map.

To set or edit styles to a layer in the portal:

Click on the layer (whose style is to be set or edited). This page opens.

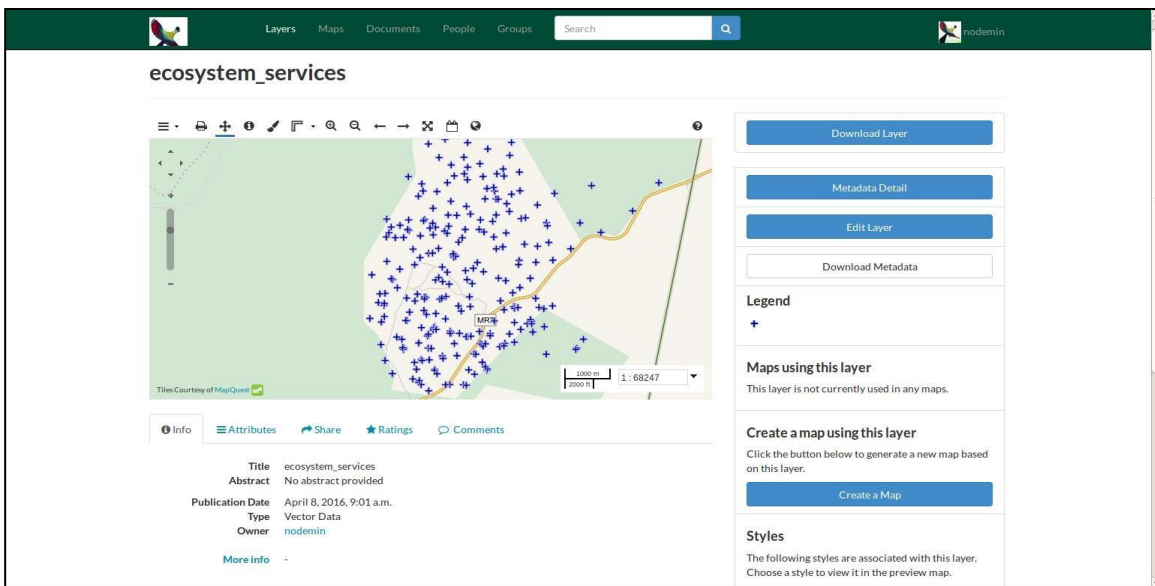


Figure 13: Layer view page

Click on **Edit Layer** to open the styles window.

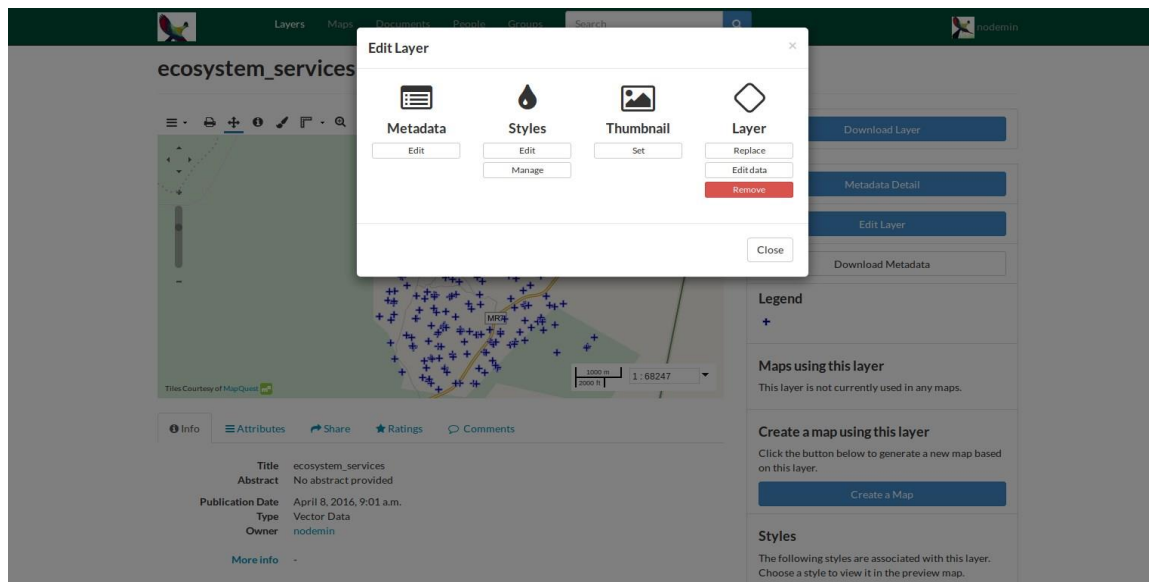


Figure 14: Edit layer dialog

Under styles section, click on **Edit** to open the style editing window.

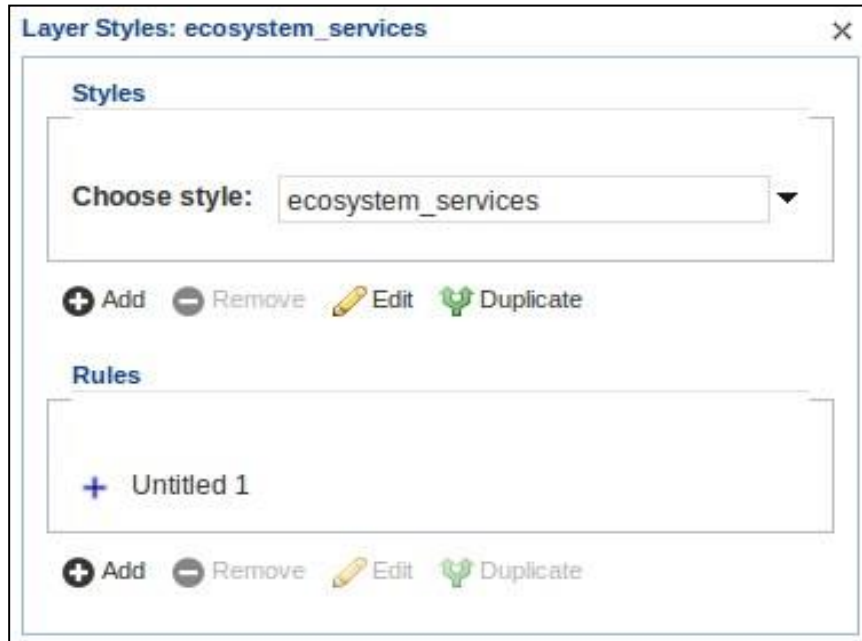


Figure 15: Layer style dialog

This window has two sections, the Styles and Rules section. The Styles section contains the available styles for that layer while the Rules section gives the legend of the layer which can be edited to feature user needs.

To edit the Rules, click on the legend “**Untitled1**” and click on Edit. This opens a window to customize the rule.

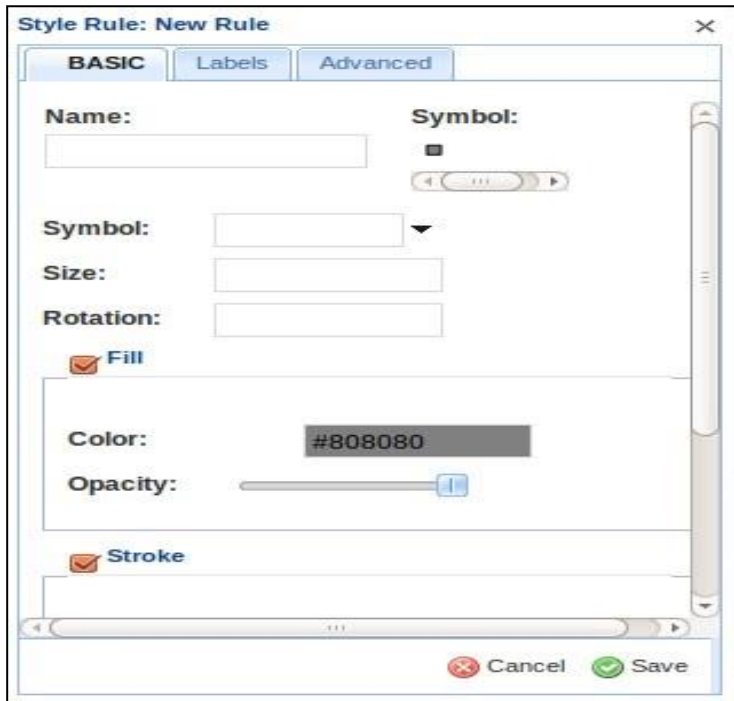


Figure 16: New rule dialog

This window contains three tabs; **Basic** which contains the name, symbol, size, rotation, fill and stroke options. Adjust these options to feature the needs user for the layer, **Label** which allows the user to show labels on the layer and **Advanced** which allows for advanced features such as layer by scale (show layer at certain scale)

After setting up all the designs as needed, click save and the map should have changed to the set style as shown below.

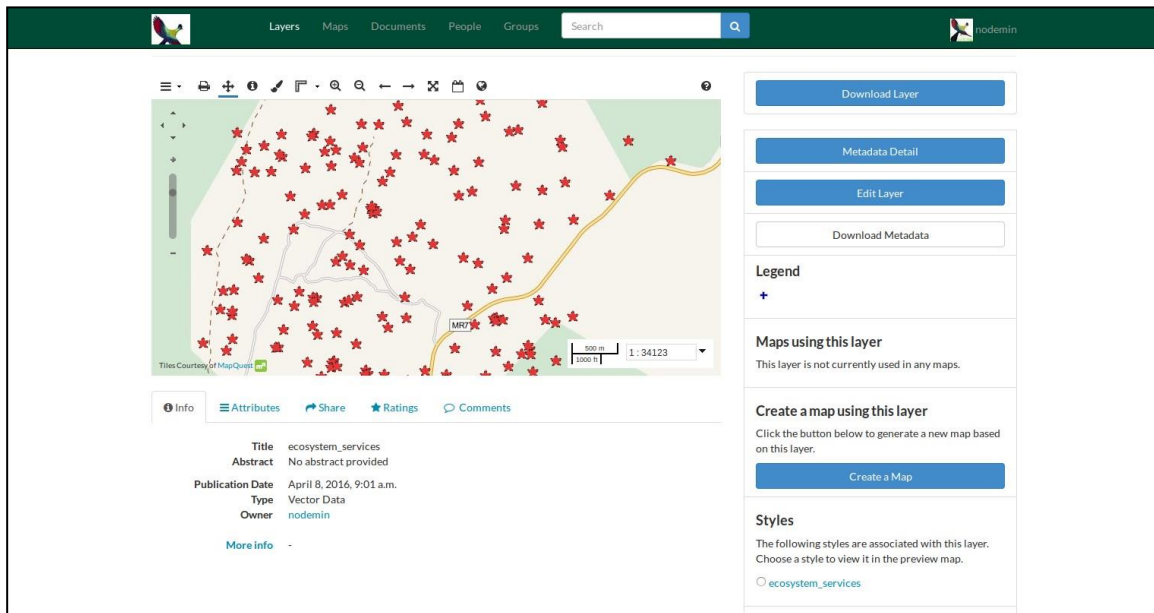


Figure 17: Edited Style page

Detailed Approach

People/Users

In the system, users are managed as individuals or as groups. For a user to exist, they must first register an account in the system. This is done at the register page as indicated above. Once the user is registered in the system, they can edit their details at the user section.

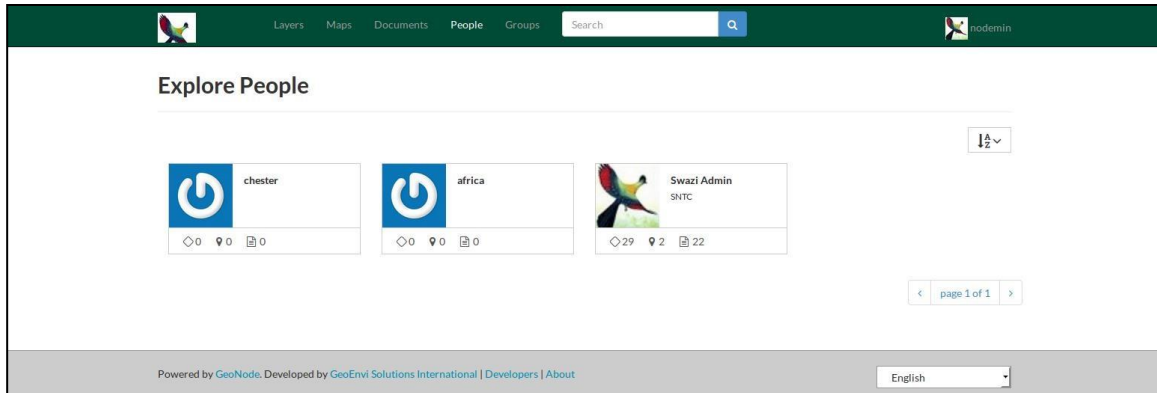


Figure 18: People Listing

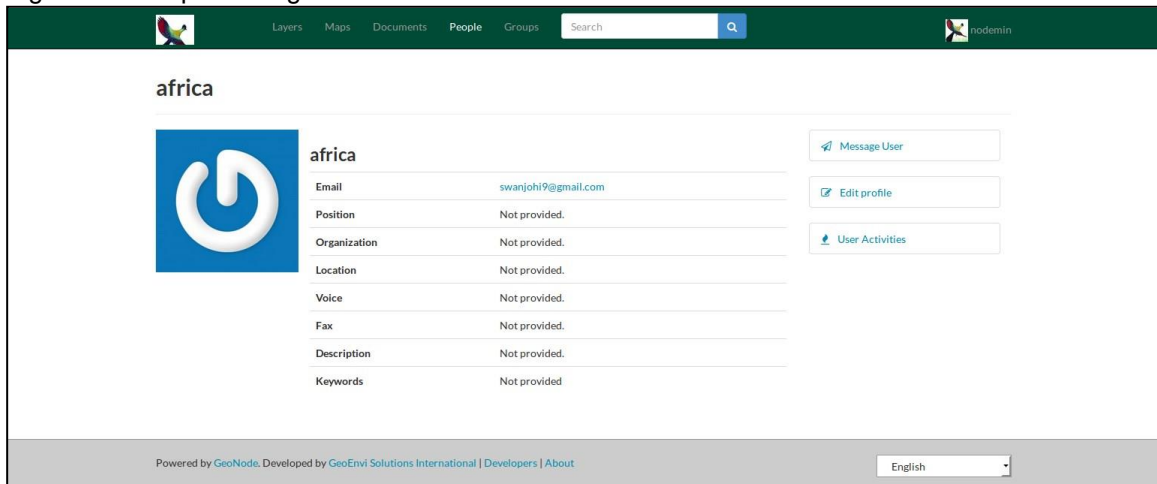


Figure 19: User profile page

Groups

Groups are used to manage the people/users in the system. This makes it easier to manage permissions and access to the system. Group details are added to reflect the group being stored and its permissions specified.

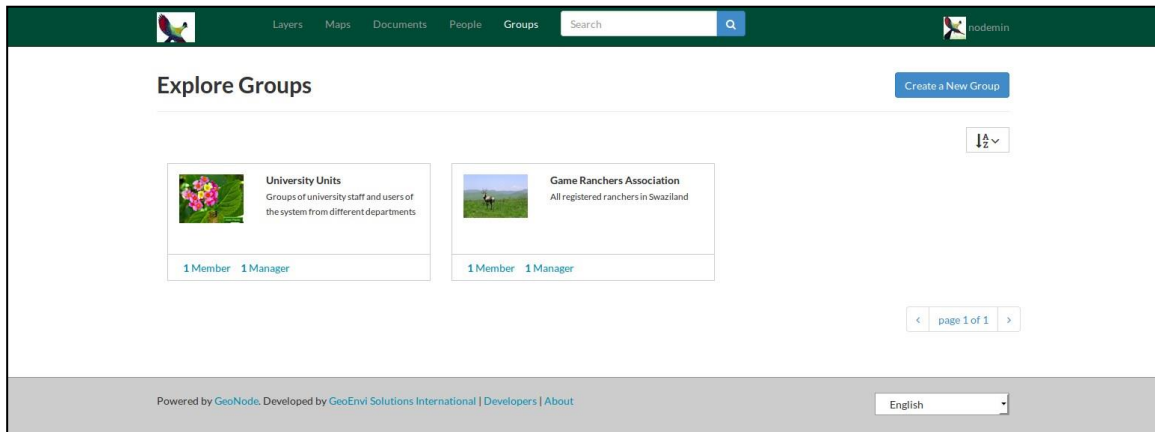


Figure 20: Groups Listing

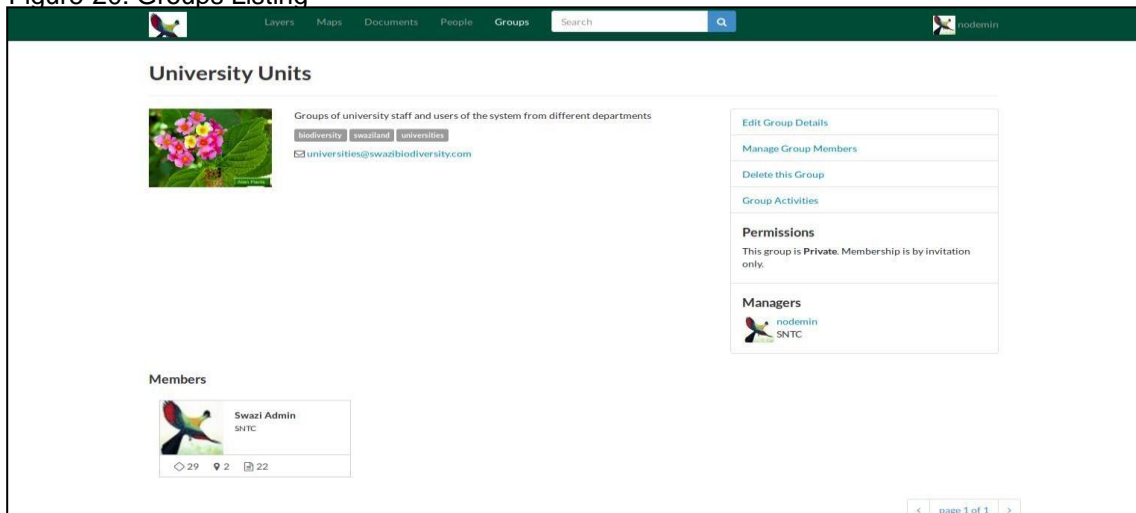


Figure 21: Group editing page

Documents

The system allows for the upload and sharing of documents that might of necessity for sharing. The types of documents supported include **.doc .docx .pdf .tif .xml** e.t.c. The upload of document procedure goes as follows; Click on **documents** on the menu bar.

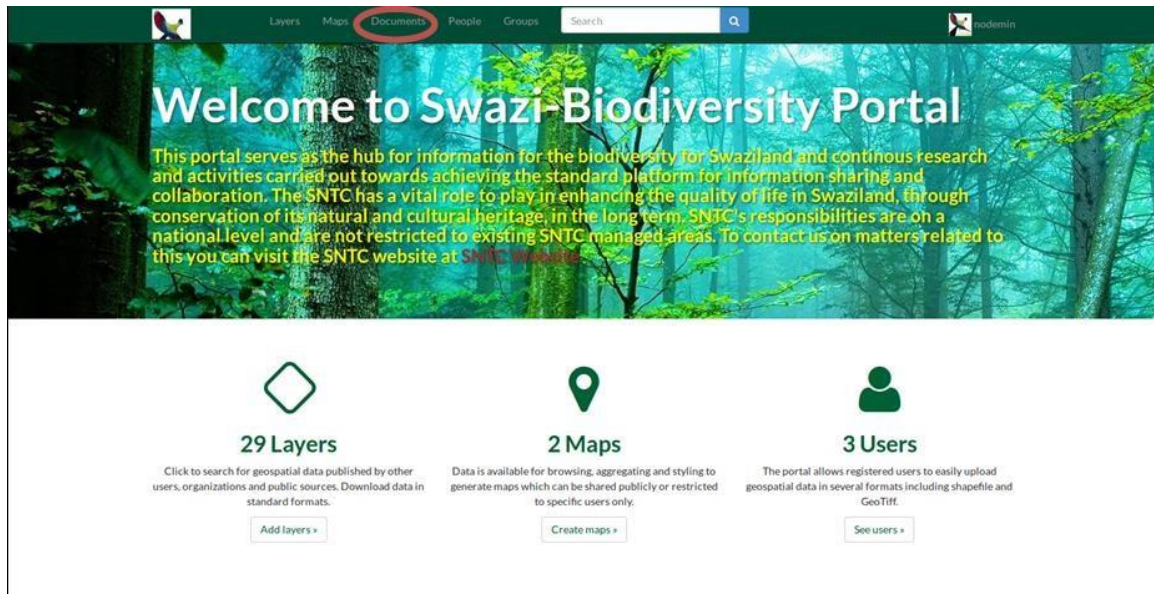


Figure 22: Portal Homepage The following dialog opens.

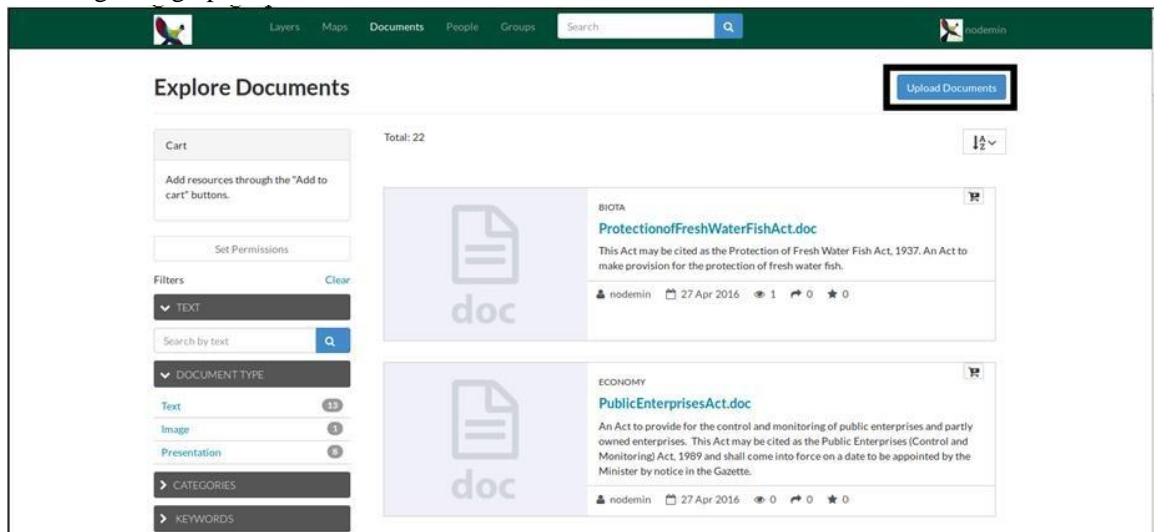


Figure 23: Document Listing

Click on the **Upload Documents** link button to open the upload dialog page

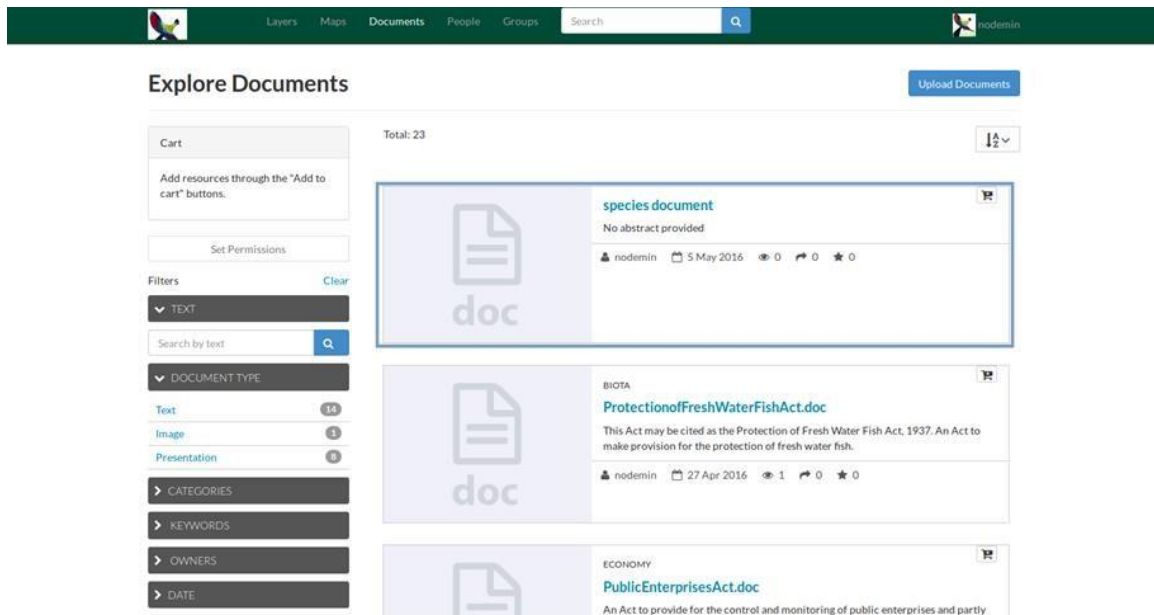
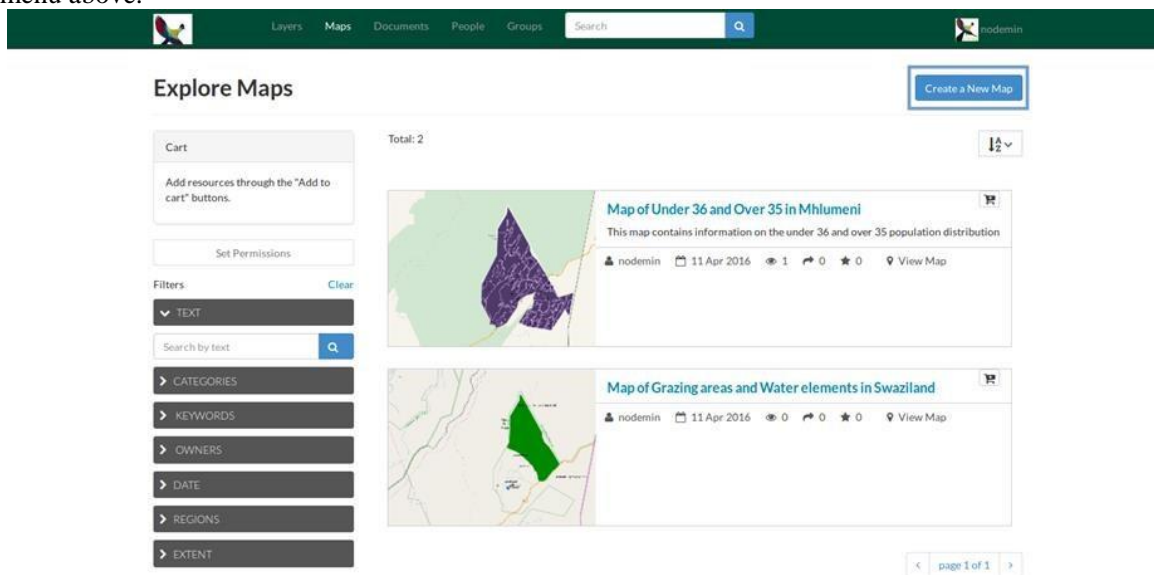


Figure 26: Document Listing

Creating Maps

Another powerful tool that comes bundled in the application is the ability to create maps from the layers that exist in the system. To create a map, these are the steps. Visit the maps page from the menu above.



portal.swazibiodiversity.com/maps/31
Figure 27: Map Listing

This page displays the all the available maps in the system. To generate a map, click on **Create a New Map** button.

This should open this dialog page.

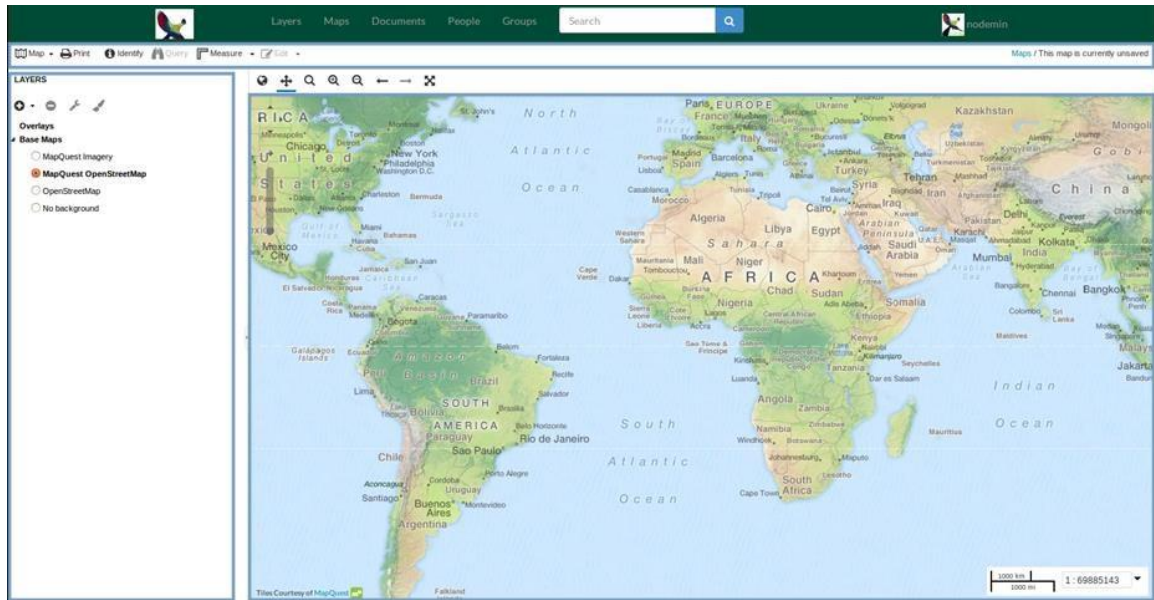


Figure 28: Map Portal

This page contains a **tool bar**, a **layer section** and a **map section**. All these are develop to help or make map making processes easy to the users.

Toolbar

This section contains the tools for use while interacting with the map.

- Map** - Holds the Publish Map and Save Map tools on this page.
- Print** - Used to print the map created on this page.
- Identify** - This is used to view details of an object on the map.
- Query** - Used for filtering data on the map
- Measure** - Holds the Length tool for measuring linear objects and Area tool for measuring polygon objects.
- Edit** - This is used to edit the information of a created map.

Layer Section

The page displayed (in above image) does not have a layer displayed. To add layers, click on the + sign under the **layers section** and select **add layer**.

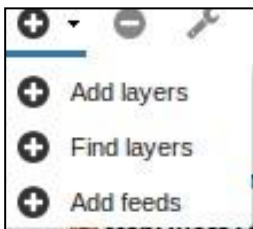


Figure 29: Add Layer tool

This will list all the available layers in the database. Select the layer on interest and click **Add layers** then **Done** to close the dialog.

Map Section

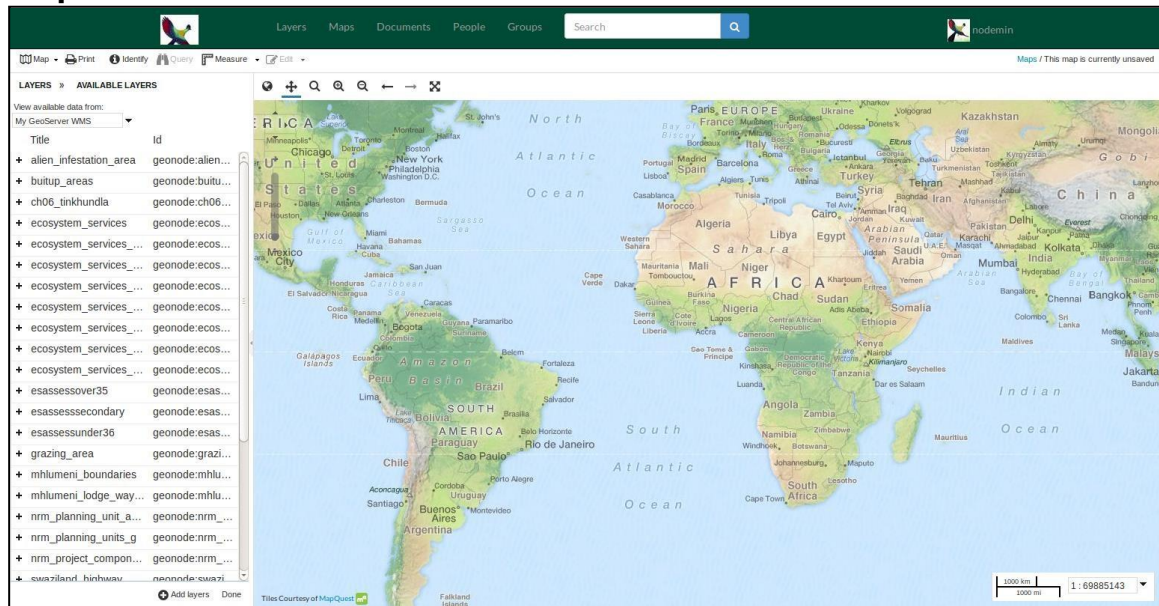


Figure 30: Adding layers from server

The layer added will now be displayed on the map.

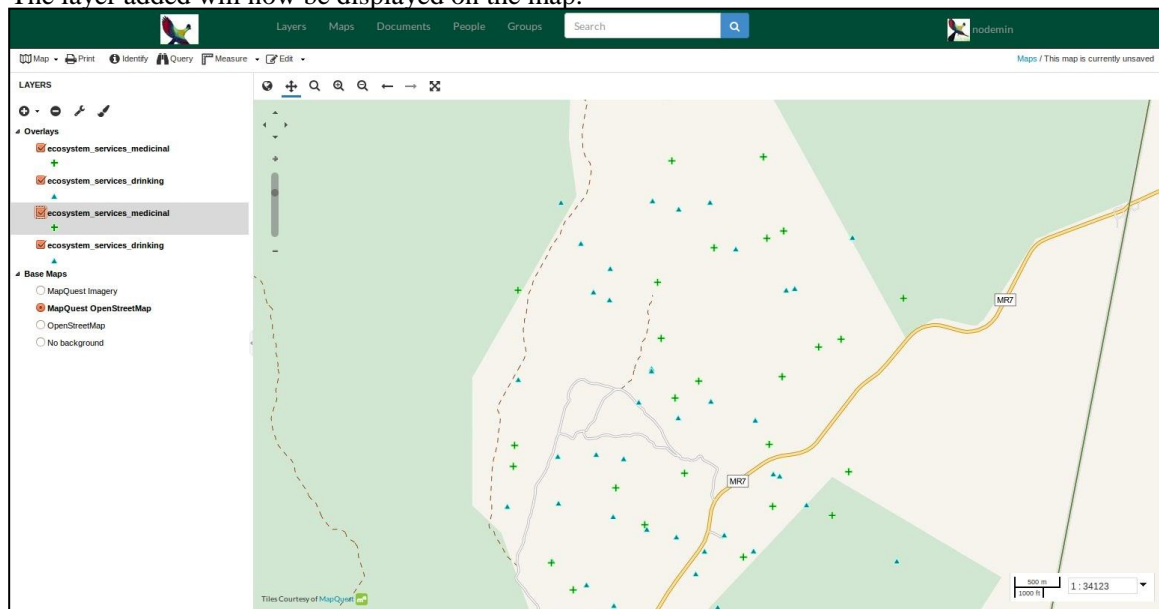


Figure 31: Data added on map from server

To remove a layer, right click on the layer and select **Remove Layer** or uncheck the check box against the layer.

Now, we already have a map with layers.

Queries

We can write a query to display only features we need.

Click on **Query**, two sections appear at the bottom of the page, the **query section** and the **results section**.

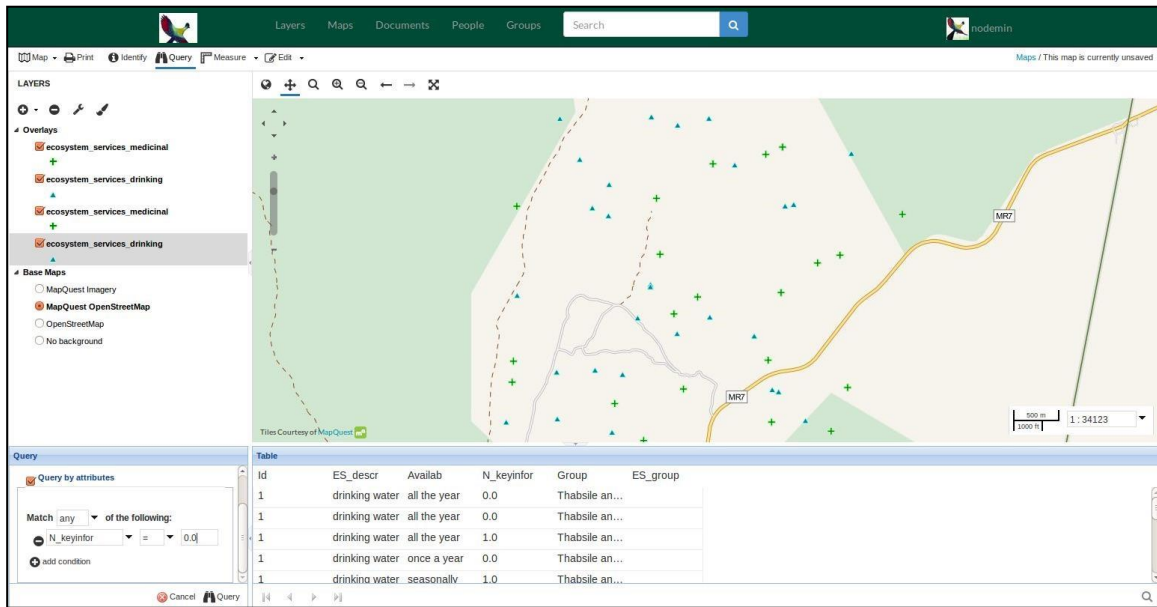


Figure 32: Query data in the system

Construct a query i.e. $N_keyinfor = 0.0$

The list on the results section is filtered and on clicking on one of the records, it's highlighted on the map.

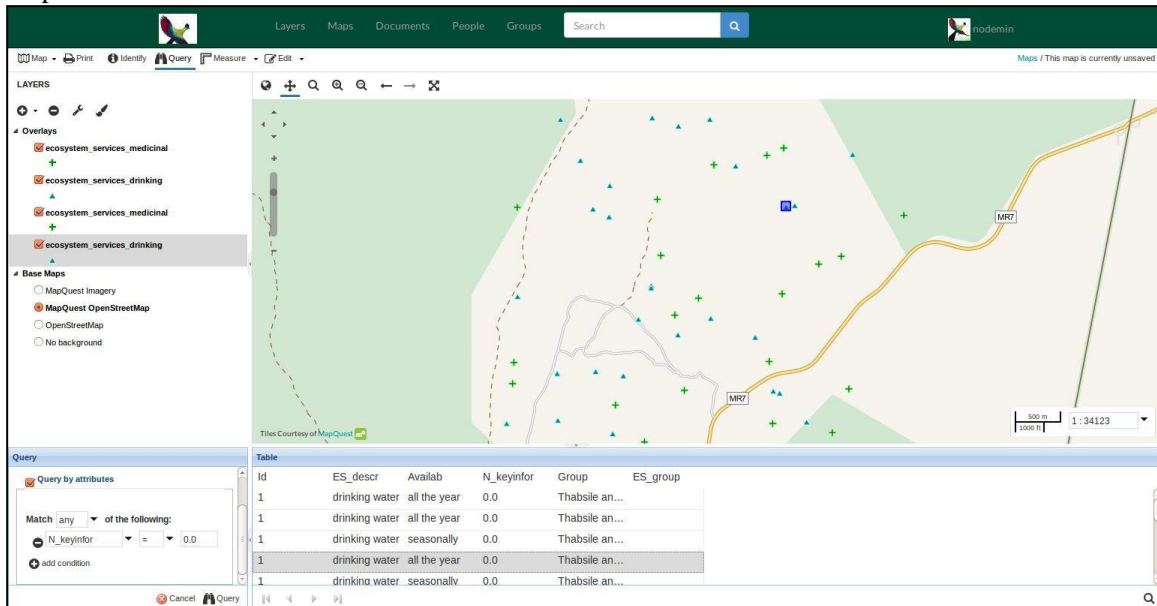


Figure 33: Highlight query result

Identify tool

Click on the **Identify tool** on top toolbar.

Click on the feature of interest on the map and its details will appear on a popup window.

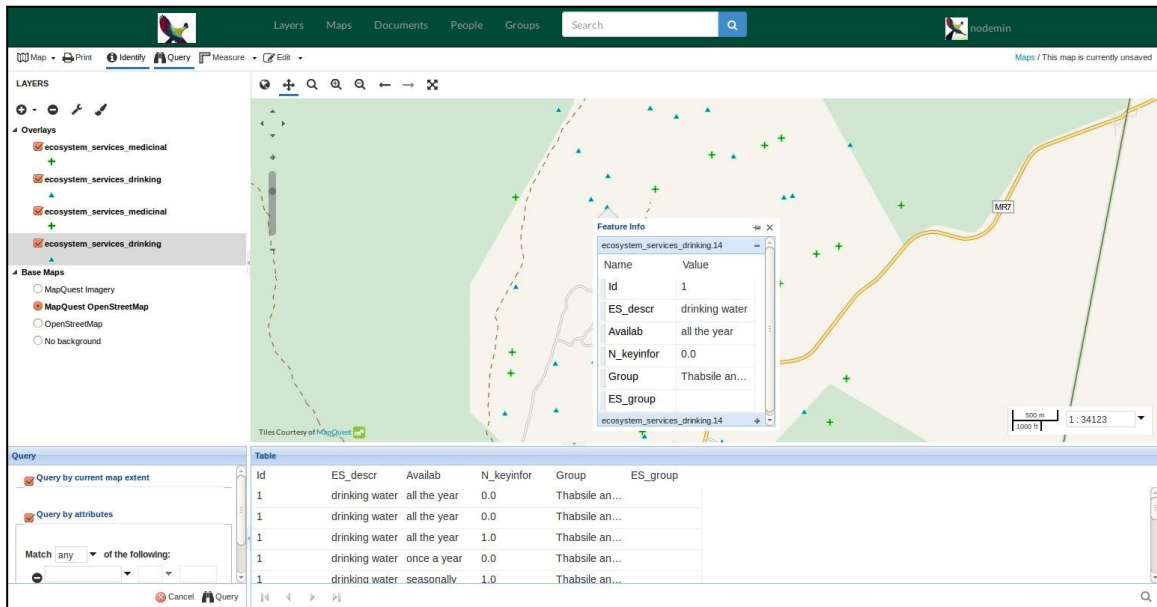


Figure 34: Identifying details of a feature on map

Publishing Map

Once a map is created, it can be embedded in a website or portal. To achieve this, we use the publish tool.

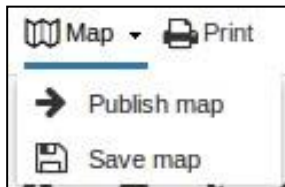


Figure 35: Map tools

Click on the **Publish Map** link and the dialog opens.



Figure 36: Publishing map on the portal

Add title and the abstract and click **Save**

This should open a dialog box with code snippet that should be copied and used on a website.



Figure 37: Code snippet for publishing map

Saving Map

The map created on this page needs to be saved for future sharing or reference. This is stored by saving the map into the system. To save the map, Click on Save Map under Map menu and fill in the title and abstract on the dialog that opens.



Figure 38: Saving map into the system

Click on save and the map is saved into the system. Now, navigate to the map section, and the map we just saved should appear as first on the list.

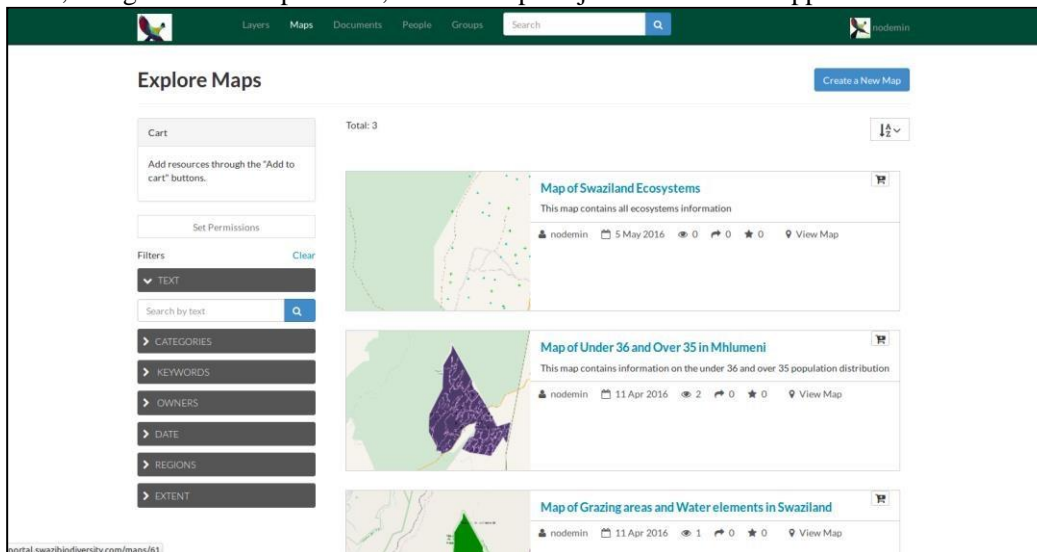


Figure 39: Generated maps listing

Conclusion

The biodiversity portal has been developed and tested fully to ensure all components are working properly. This guide gives a definitive approach to the system for any user who wants to interact with the system.

All sections of the system have been highlighted in this guide and procedures explained.

For any issues contact the administrator at *admin@swazibiodiversity.com* for further help on this.