GeoNode Users Workshop Documentation

Release 2.0

GeoNode

February 08, 2013

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Welcome to the GeoNode Users Workshop! This workshop will teach how to use the GeoNode software application.

These workshop materials should be accompanied by a data package containing the following files:

- `/doc`—These workshop materials in HTML format
- `/data`—Spatial data to be used during the workshop

CHAPTER

ONE

INTRODUCTION

This section will give a brief introduction to GeoNode and tour its web-based interface.

1.1 What is GeoNode?

GeoNode is a geospatial content management system, a platform for the management and publication of geospatial data. It brings together mature and stable open-source software projects under a consistent and easy-to-use interface allowing non-specialized users to share data and create interactive maps.

Data management tools built into GeoNode allow for integrated creation of data, metadata, and map visualizations. Each dataset in the system can be shared publicly or restricted to allow access to only specific users. Social features like user profiles and commenting and rating systems allow for the development of communities around each platform to facilitate the use, management, and quality control of the data the GeoNode instance contains.

It is also designed to be a flexible platform that software developers can extend, modify or integrate against to meet requirements in their own applications.

1.2 A tour of GeoNode

In order to get started, let's look at the GeoNode interface and get a feel for how to navigate around it.

The GeoNode web interface is the primary method of interacting with GeoNode as a user. From this interface, one can view and modify existing spatial layers and maps, as well as find information on other GeoNode users.

Without being logged in, you are limited to read-only access of public layers.

1. Navigate to you your GeoNode instance, available here:

   This page shows a variety of information about the current GeoNode instance. At the top of the page, a toolbar exists showing quick links to view *layers*, *maps*, documents (metadata), people ADD LINK, and a search field. Below this is a listing of recently updated layers, including abstract, owner, rating, and download button (if available).

2. Click the *Layers* link in the toolbar to go to the *Explore Layers* page.

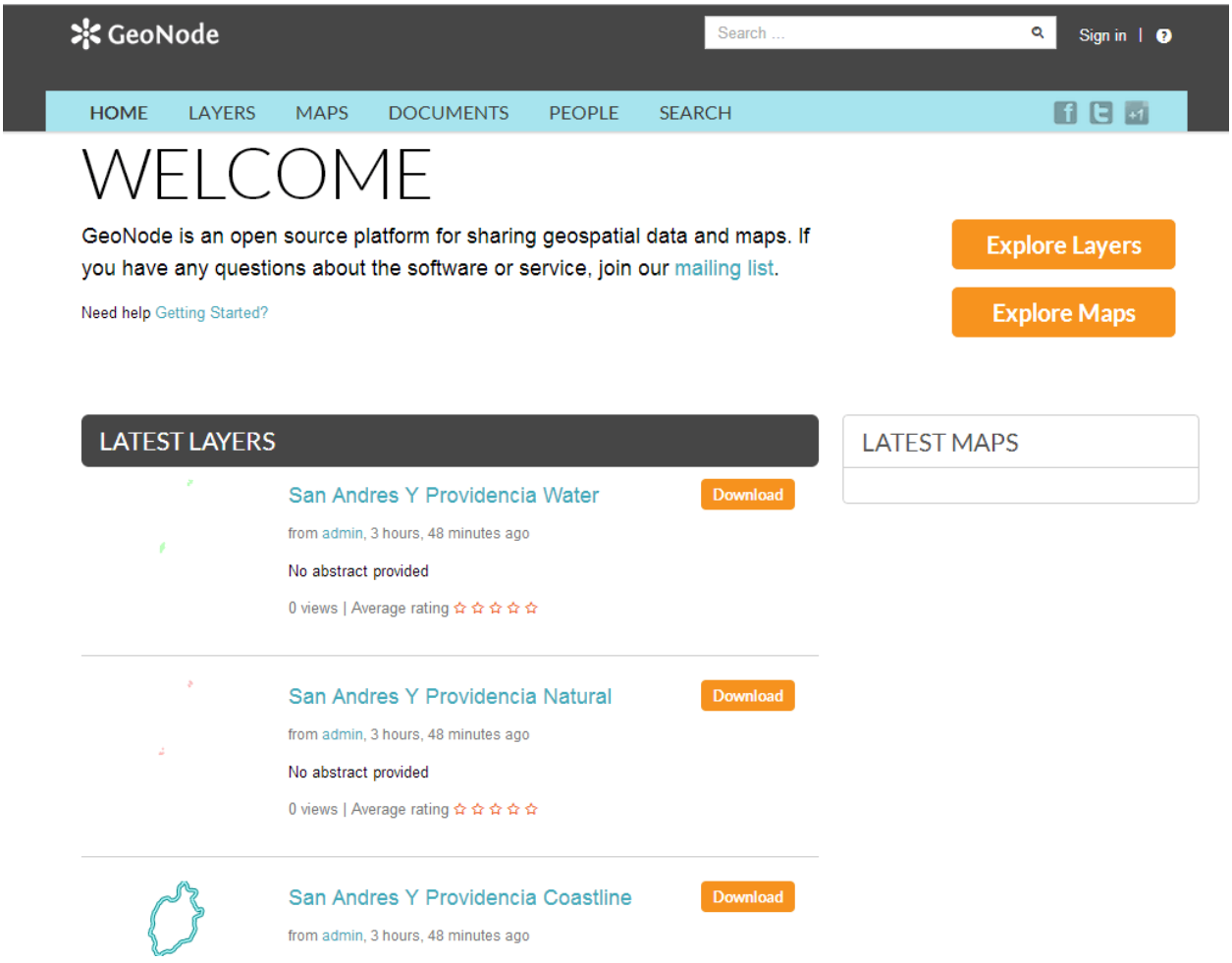

Figure 1.1: *Welcome page*

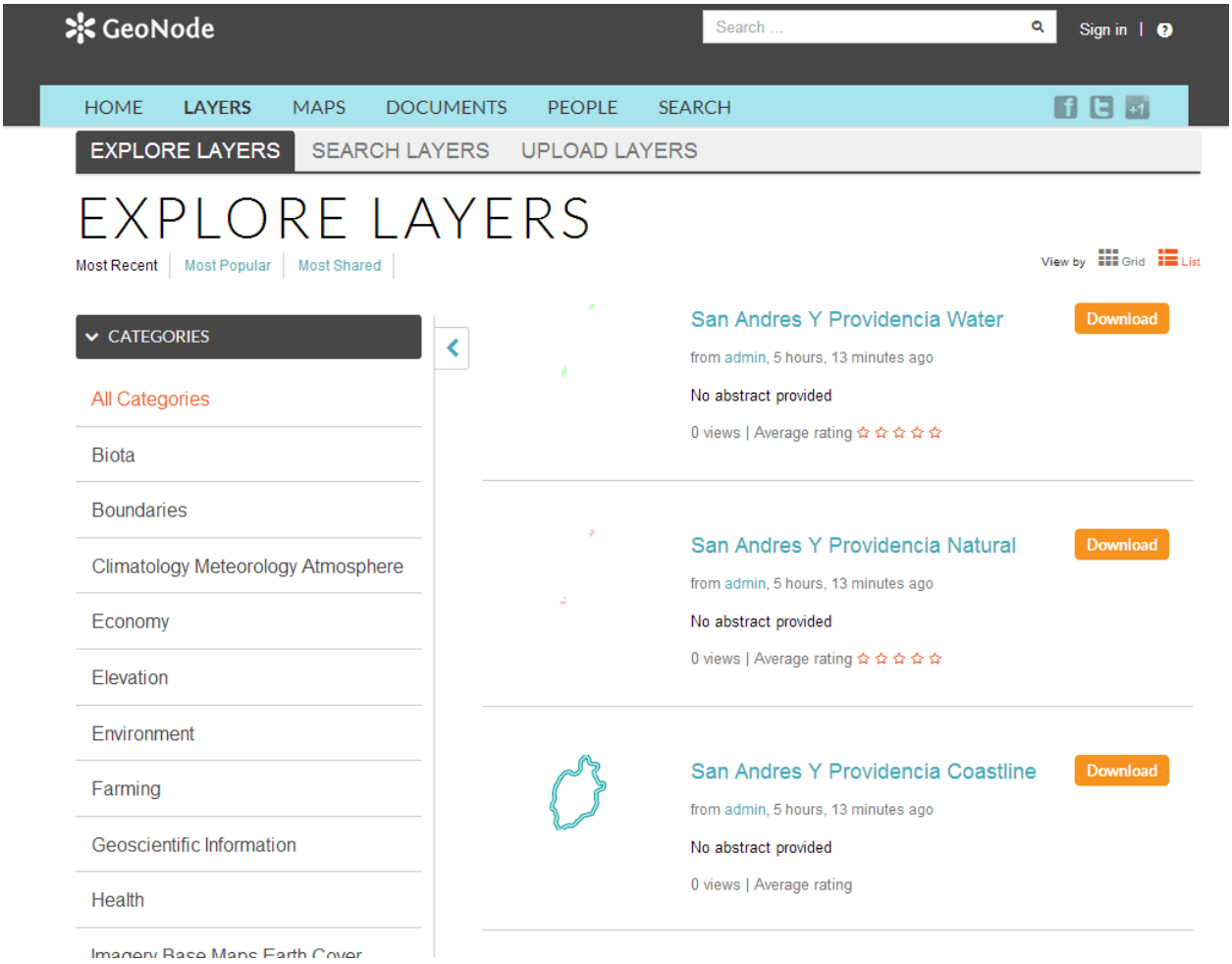

Figure 1.2: *Explore Layers page*

This page shows all layers known to GeoNode, available in either List or Grid viewing. Layers can be sorted by *Most Recent*, *Most Popular*, or *Most Shared*. Also available are a list of categories, with which layers can be connected with.

3. Find a layer and click on its name.

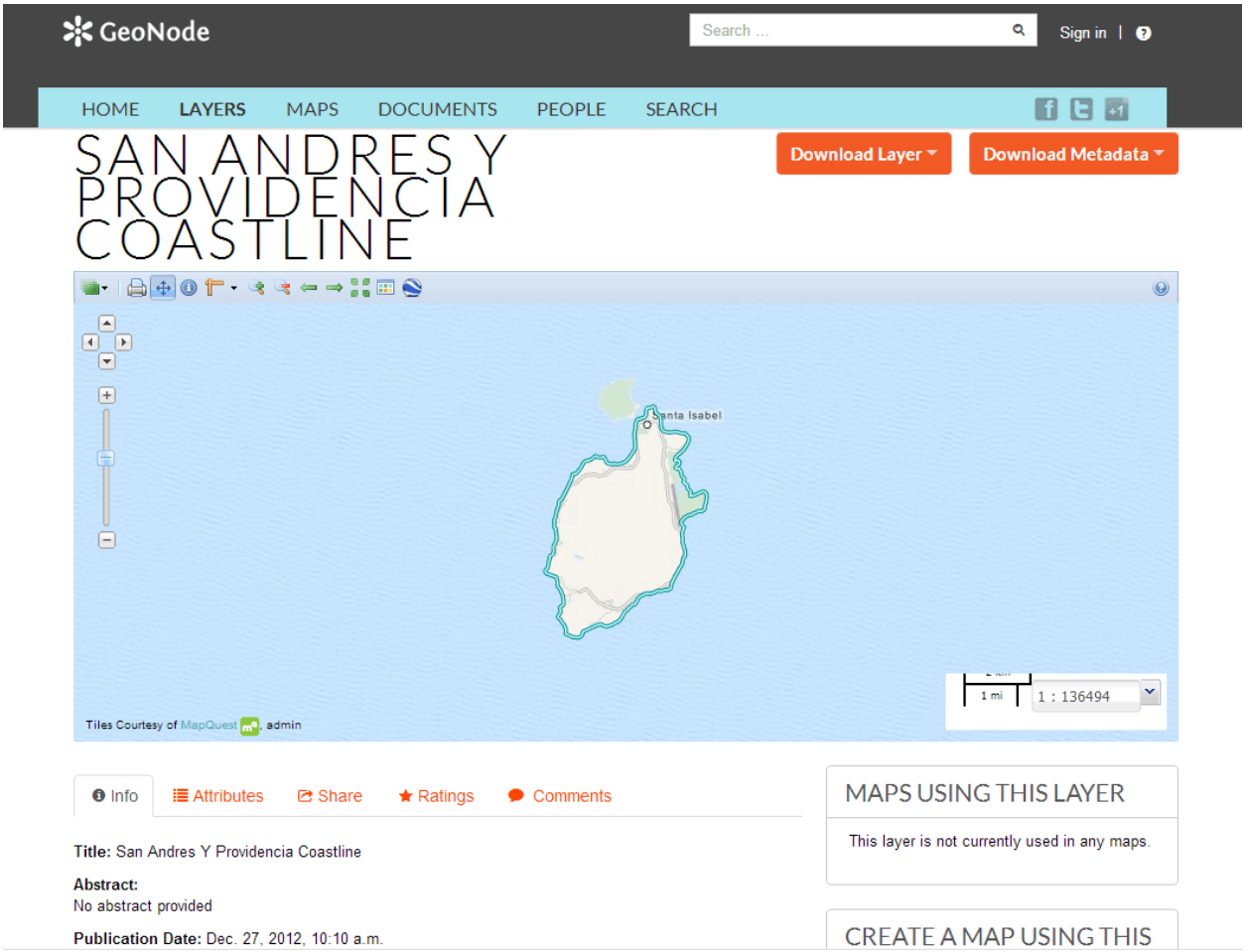

Figure 1.3: *Viewing a layer*

4. A layer viewing page will display, with the layer itself superimposed on a hosted base layer (in this case MapQuest OpenStreetMap). Explore this page, noting the various options available to you.

5. Now click the *Maps* link in the tool bar to go to the *Explore Maps* page.

   This page shows all maps known to GeoNode, available with similar viewing options as with the layers. Currently, there are no maps here, but we will create one later on in the workshop.

6. Click the *Search* link in the toolbar to bring up the *Search* page.

   This page contains a wealth of options for customizing a search for various information on this GeoNode instance. While a simple search box is available at the top of every page, this search from allows for much more fine-tuned searches.

Now that you are familiar with the basic interface, the next step is to create your own account so you manage some GeoNode resources of your own.

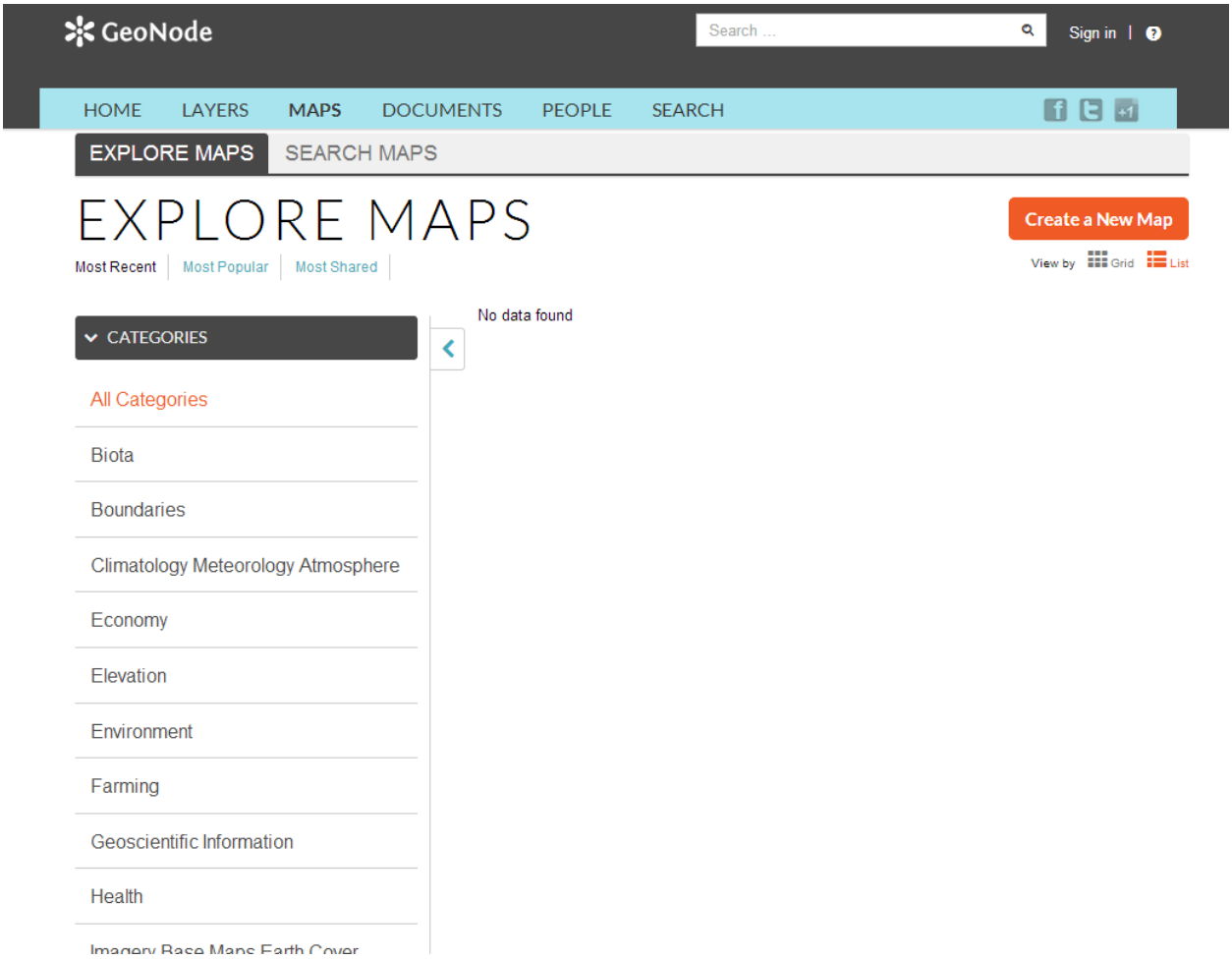

Figure 1.4: *Explore Maps page*

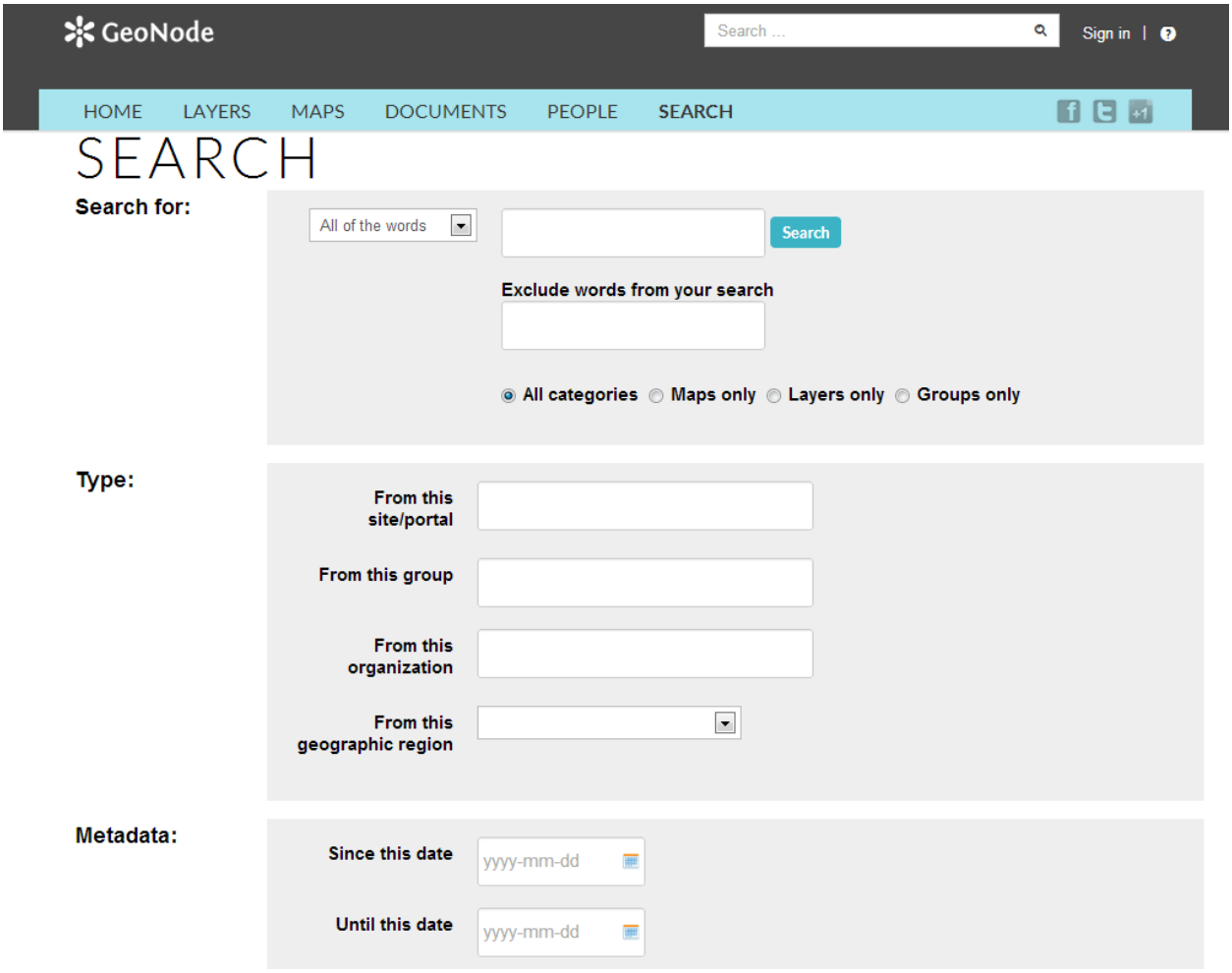

Figure 1.5: *Search page*

CHAPTER

TWO

ACCOUNTS AND USERS

GeoNode is primarily a *social* platform, and thus a primary component of any GeoNode instance is the user account. This section will guide you through account registration, updating your account information, and viewing other user accounts.

2.1 Creating a new account

Before you can save or edit any layers on a GeoNode instance, you need to create an account.

1. From any page in the web interface, you will see a *Sign in* link. Click that link, and in the dialog that displays, click the *Register now* link.
2. On the next page, fill out the form. Enter a user name and password in the fields. Also, enter your email address for verification.
3. You will be returned to the welcome page. An email will be sent confirming that you have signed up. While you are now logged in, you will need to confirm your account. Navigate to the link that was sent in the email.
4. Click *Confirm*. You will be returned to the homepage.

2.2 Managing your profile

Your profile contains personal information.

1. Click on your user name in the top right of the screen. A drop-down list will show. Click on *Profile* to enter the Profile settings page.
2. The next page shows your profile, which is currently empty.
3. Click the *Edit profile information* link.
4. On this page, your personal information can be set, including your avatar. Enter some details in the *Profile* box as well as your city and country info.
5. When finished, click *Update profile*.
6. You will be returned to the main profile page. Now click *Account settings*.
7. On this page you can change your email address, time zone, and language. Your email should be populated already, but set the timezone to your current location.
8. When finished, click *Save*.

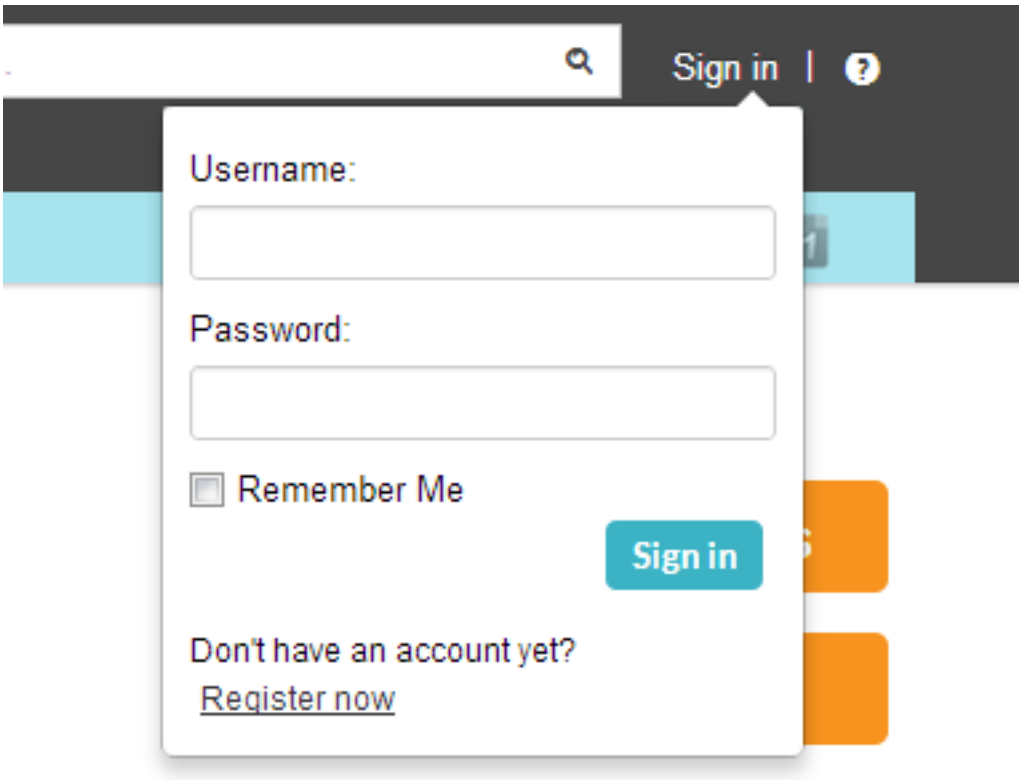

Figure 2.1: *Sign in screen*

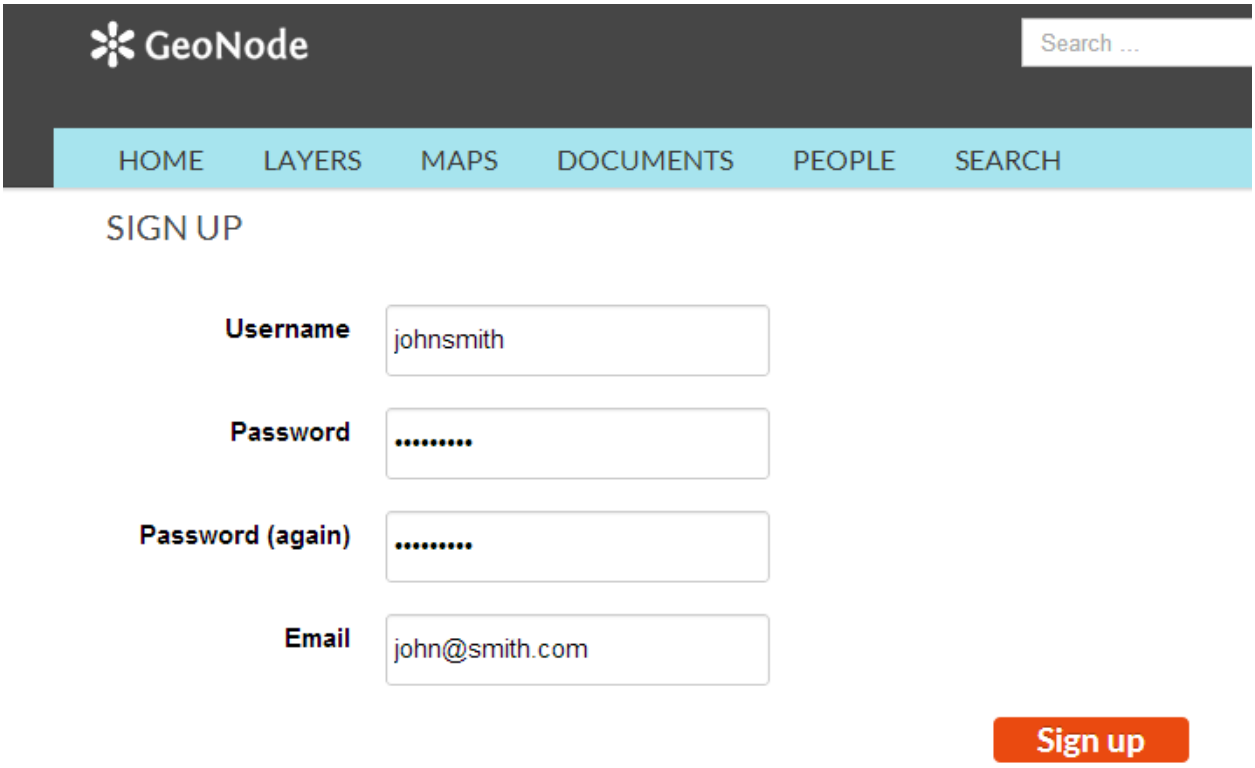

Figure 2.2: *Registering for a new account*

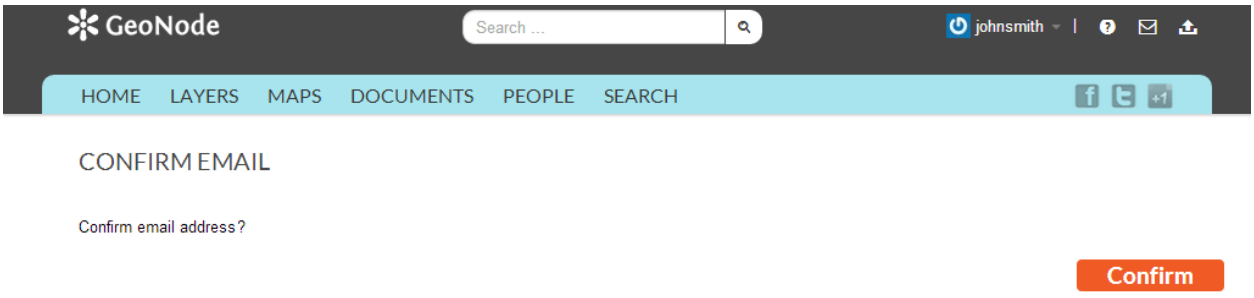

Figure 2.3: *Confirming your email address*

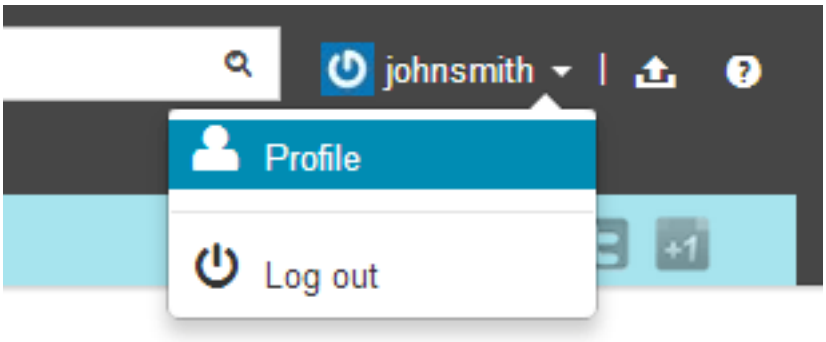

Figure 2.4: *Link to your profile*

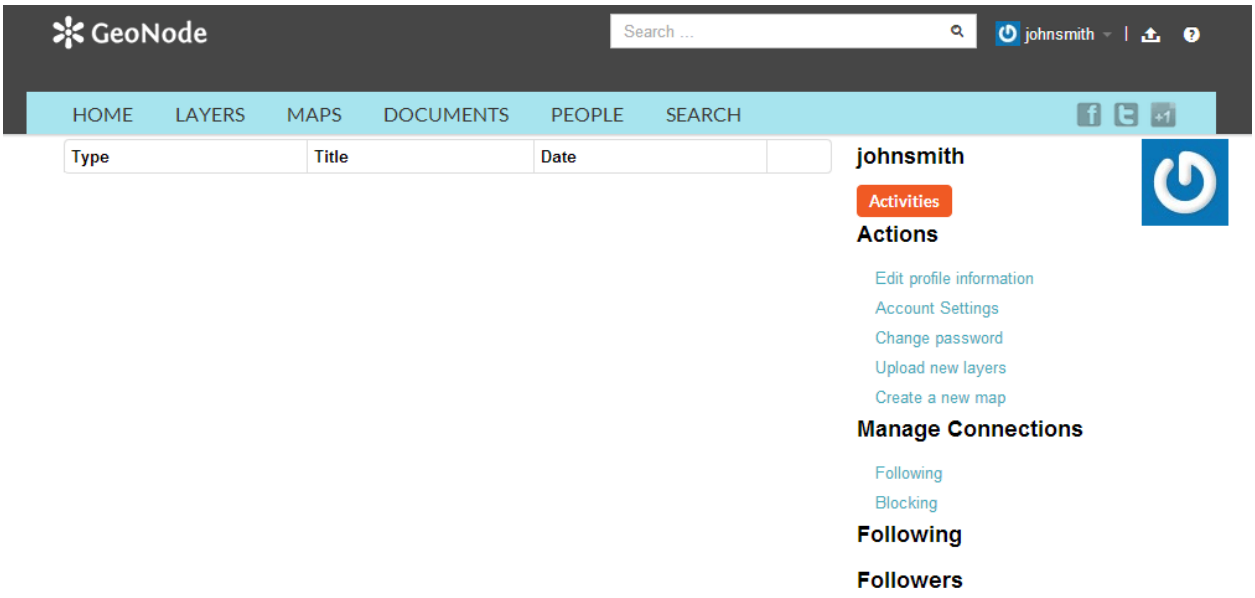

Figure 2.5: *Profile page*

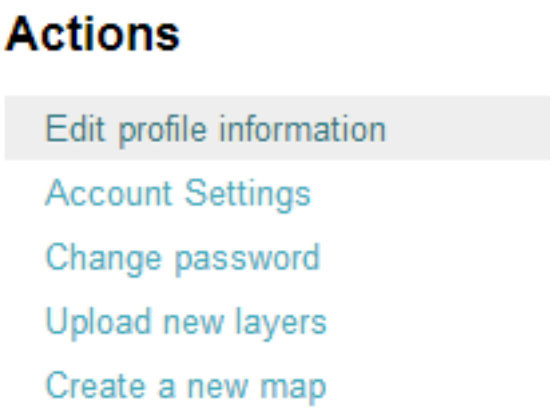

Figure 2.6: *Link to edit your profile*

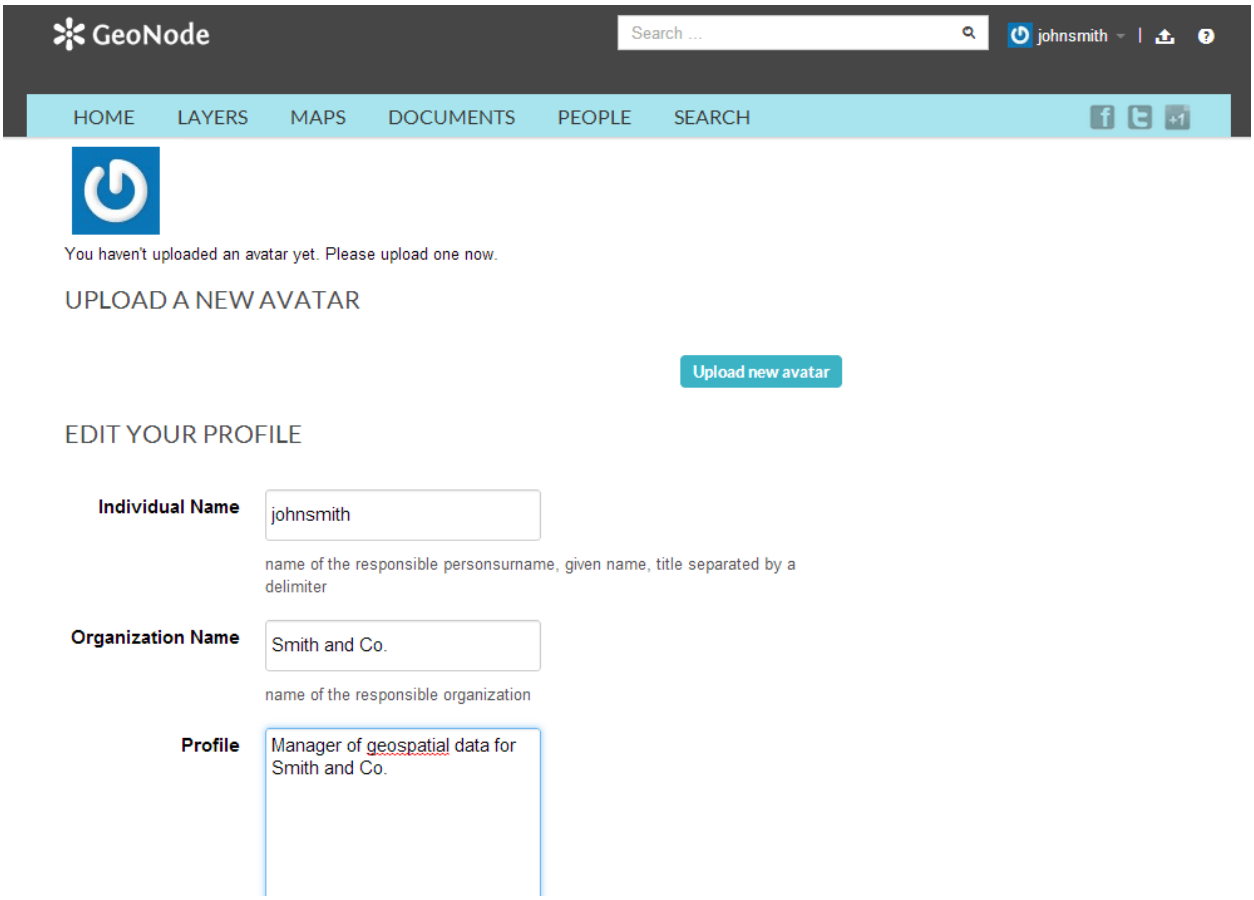

Figure 2.7: *Editing your profile*

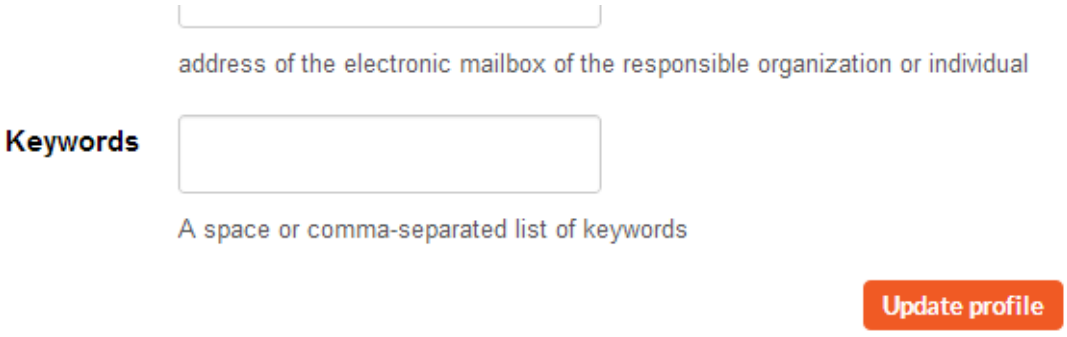

Figure 2.8: *Link to save your profile updates*

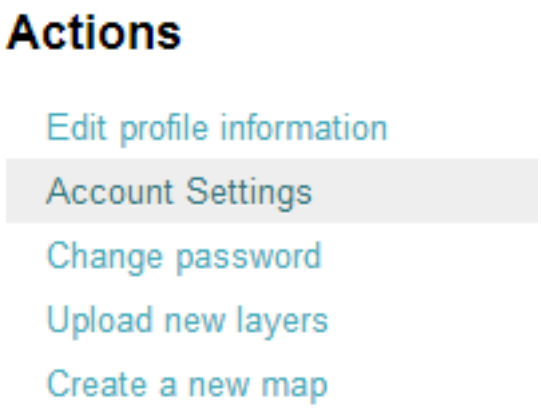

Figure 2.9: *Link to edit your account settings*

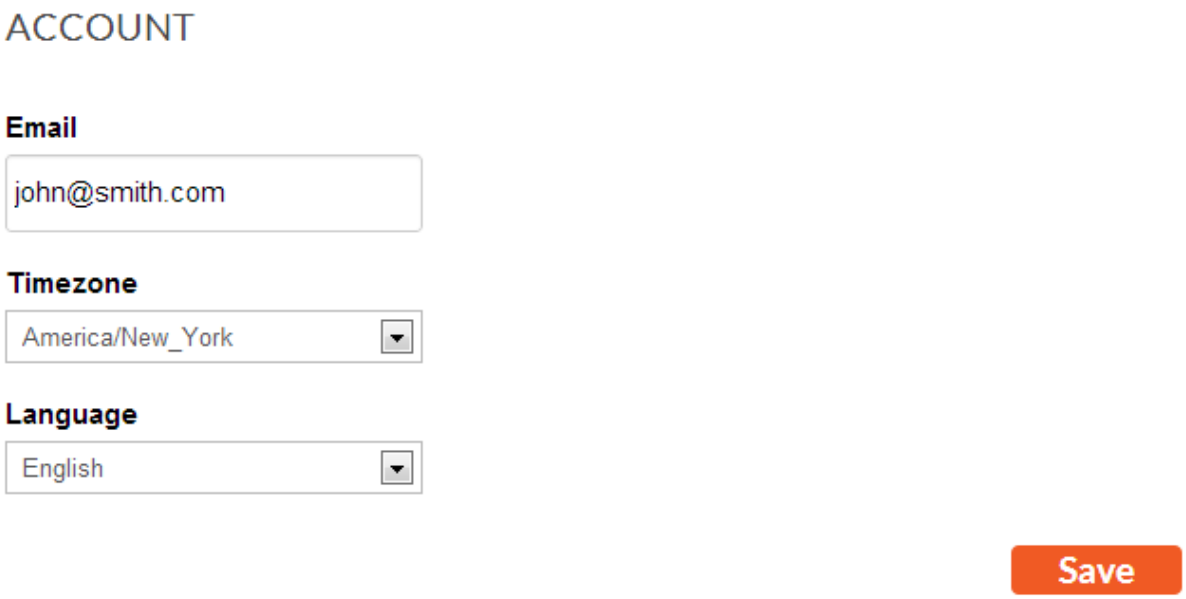

Figure 2.10: *Editing your account*

2.3 Viewing other user accounts

Now that your account is created, you can view other accounts on the system. Note that on the main profile page there are options for following (and blocking) other users.

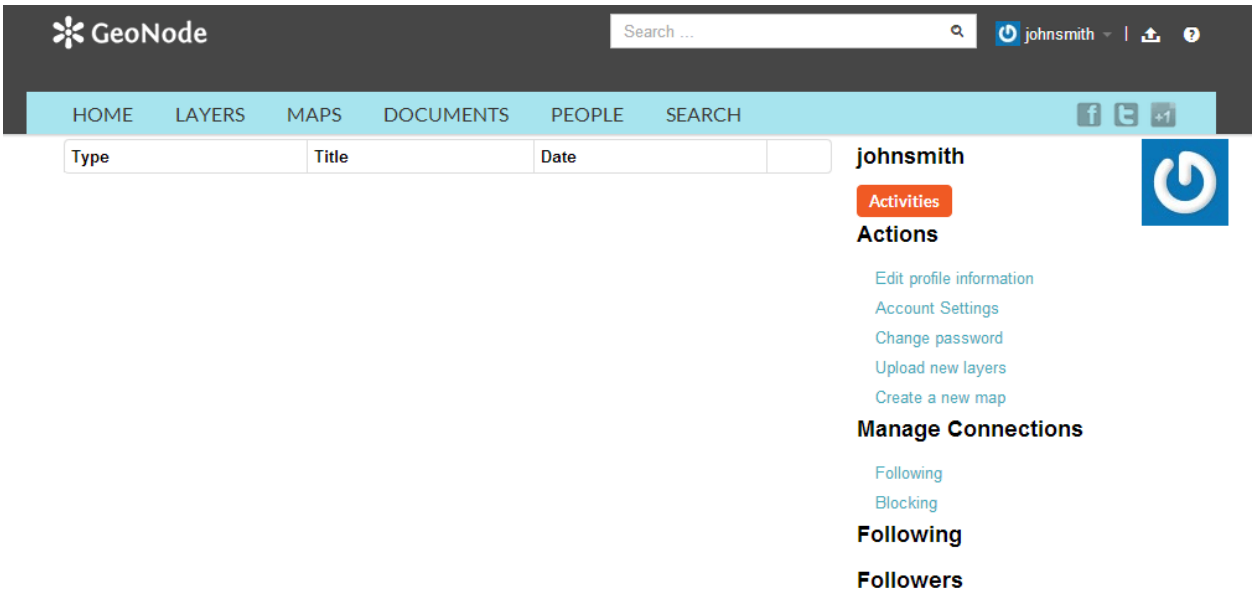

Figure 2.11: *Profile page*

1. To see information about other users on the system, click the *People* link on the top toolbar. You will see a list of users registered on this system.
2. Click on the user name for a particular user. You will see the layers owned by this user.

1. You can also click *Activities* to see the activity feed.
2. If you are interested in keeping track of what this user does, go back to the previous page and click the *Follow* button.
3. A confirmation page will display. Click *Confirm*.
4. You will now be following this user, and your profile page will note this.

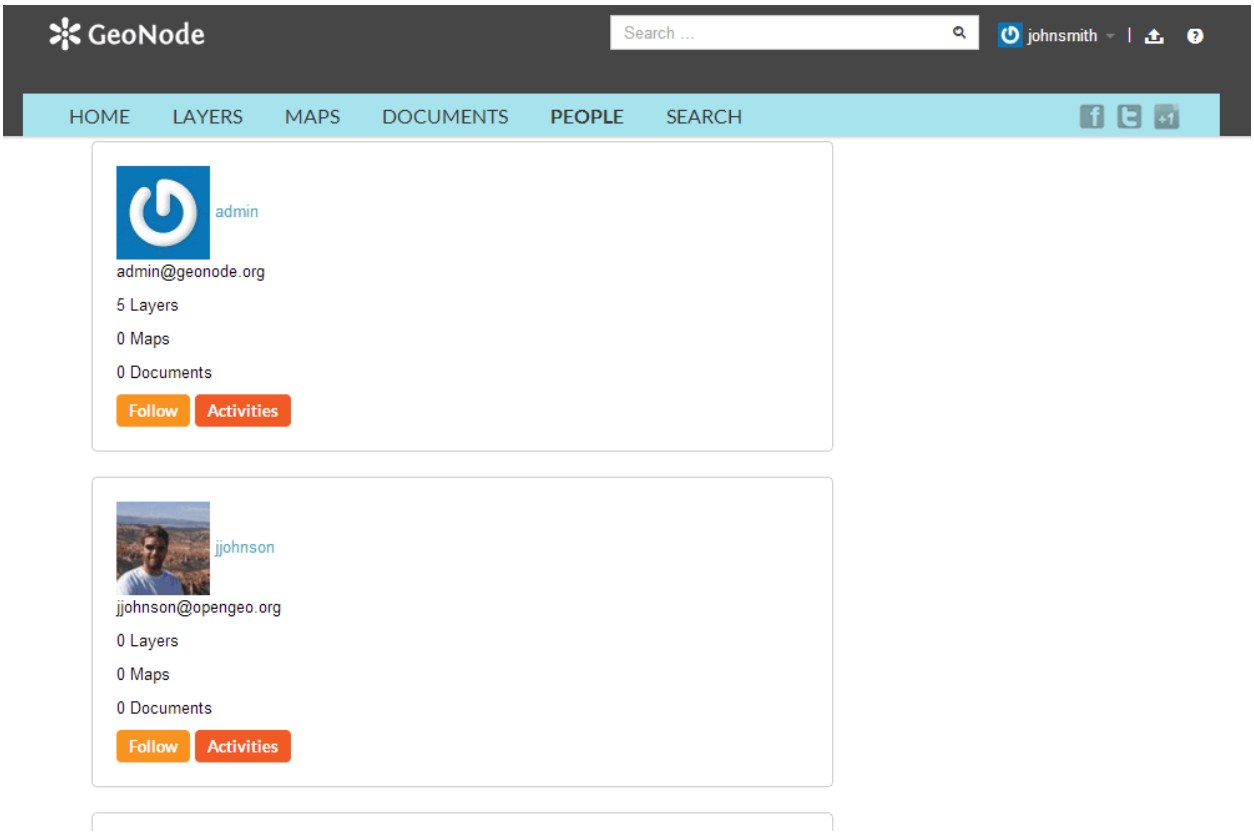

Figure 2.12: *List of users*

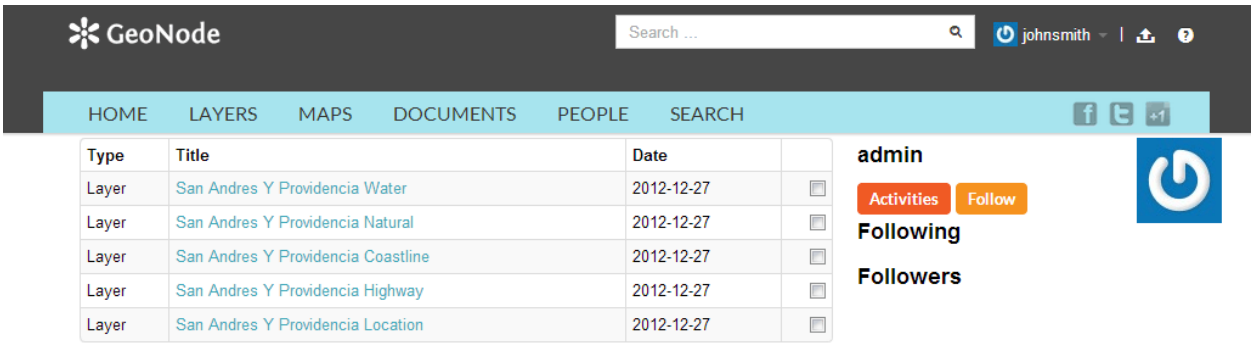

Figure 2.13: *List of layers owned by a user*

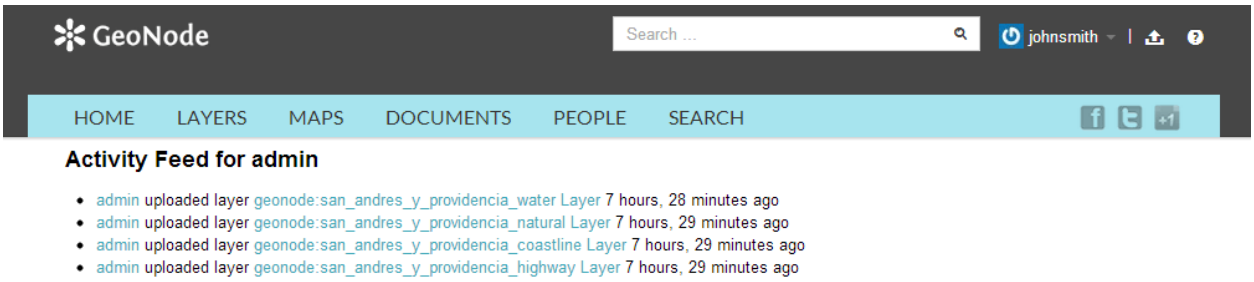

Figure 2.14: *List of users*

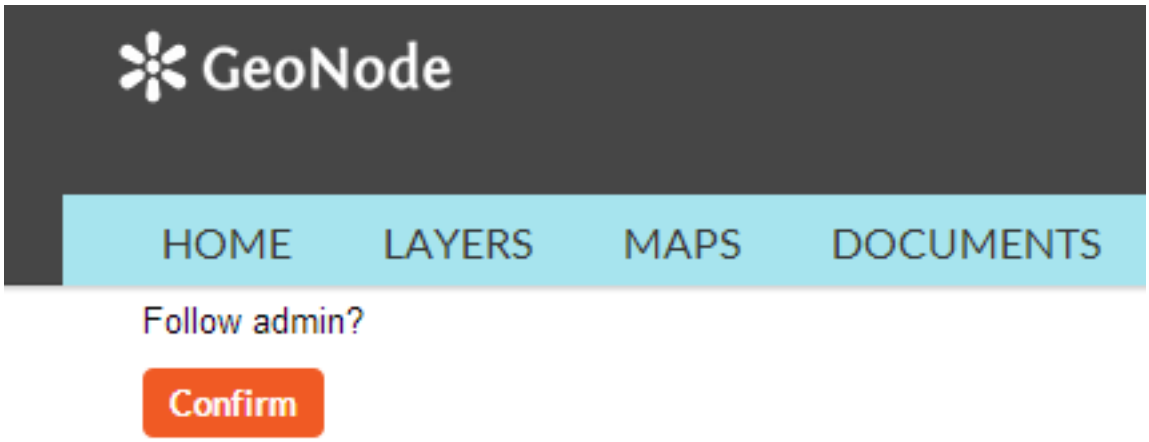

Figure 2.15: *Confirming following a user*

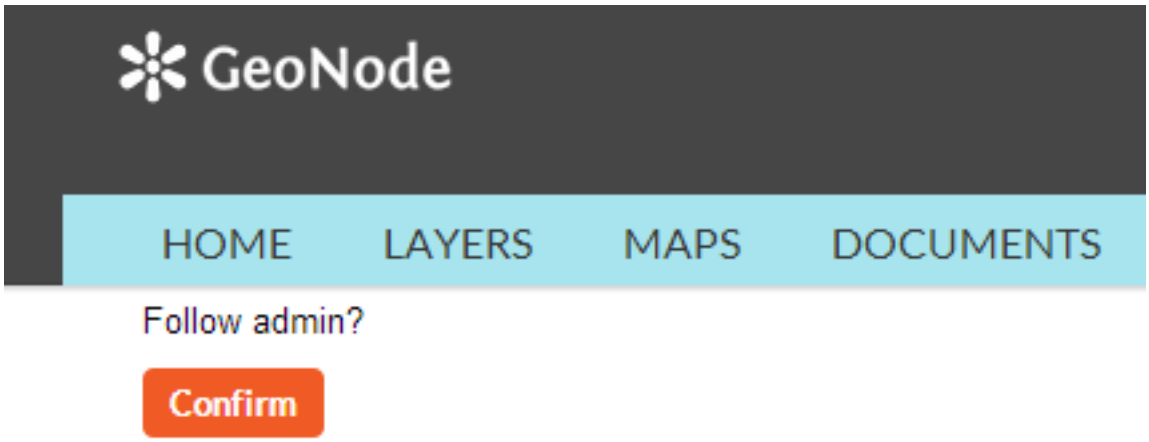

Figure 2.16: *Success following a user*

CHAPTER

THREE

MANAGING LAYERS

After user accounts, the next primary component of GeoNode is the **layer**. Layers are a published resource representing a raster or vector spatial data source. Layers also can be associated with metadata, ratings, and comments.

In this section, you will learn how to create a new layer by uploading a local data set, add layer info, change the style of the layer, and share the results.

3.1 Uploading a layer

Now that we have taken a tour of GeoNode and viewed existing layers, the next step is to upload our own.

In your data pack is a directory called `data`. Inside that directory is a shapefile called `san_andres_y_providencia_administrative.shp`. This is a data set containing ... This will be the first layer that we will upload to GeoNode.

1. Navigate to the GeoNode welcome page.
2. Click the *Layers* link on the top toolbar. This will bring up the Layers menu.

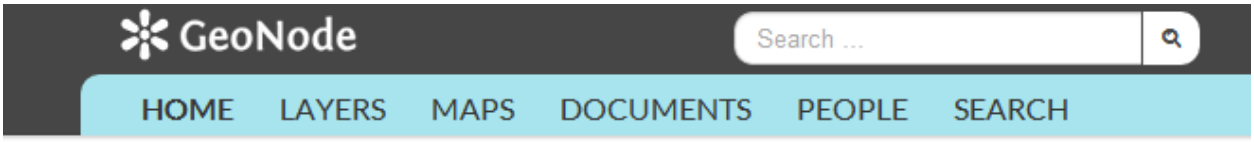

Figure 3.1: *Main toolbar for GeoNode*

3. Click *Upload Layers* in the Layers toolbar. This will bring up the upload form
4. Fill out the form.
    - Leave the title blank for now (it will be autopopulated based on the file name).
    - Next to the *Data* field, click the *Browse...* button. This will bring up a local file dialog. Navigate to your data folder and select the `san_andres_y_providencia_administrative.shp` file.
    - A few new options will appear once this shapefile is selected. Next to the *DBF* field, click the *Browse...* button. This will bring up the same local file dialog. Select the `san_andres_y_providencia_administrative.dbf` file.
    - Repeat the same process for the *SHX* and *PRJ* fields.
    - Leave the rest of the fields blank.

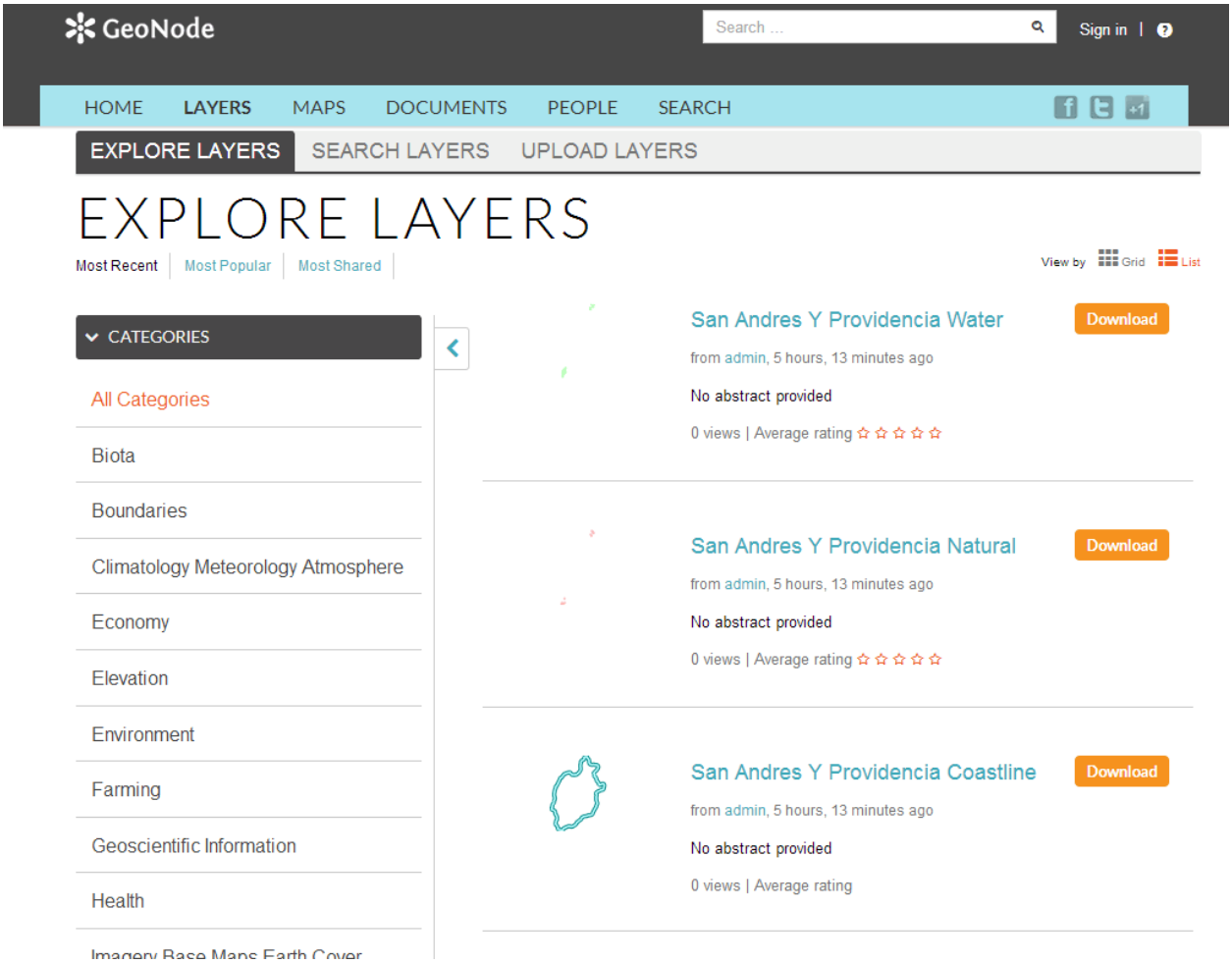

Figure 3.2: *Layers menu*

Figure 3.3: *Layers toolbar*

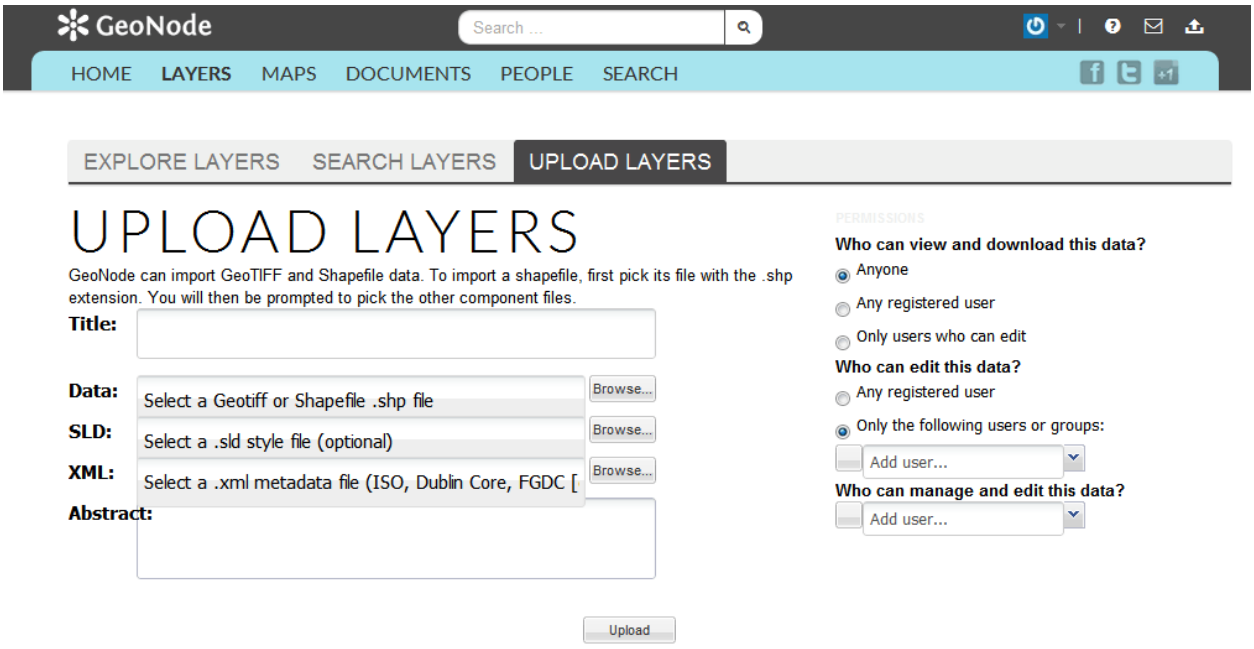

Figure 3.4: *Upload Layers form*

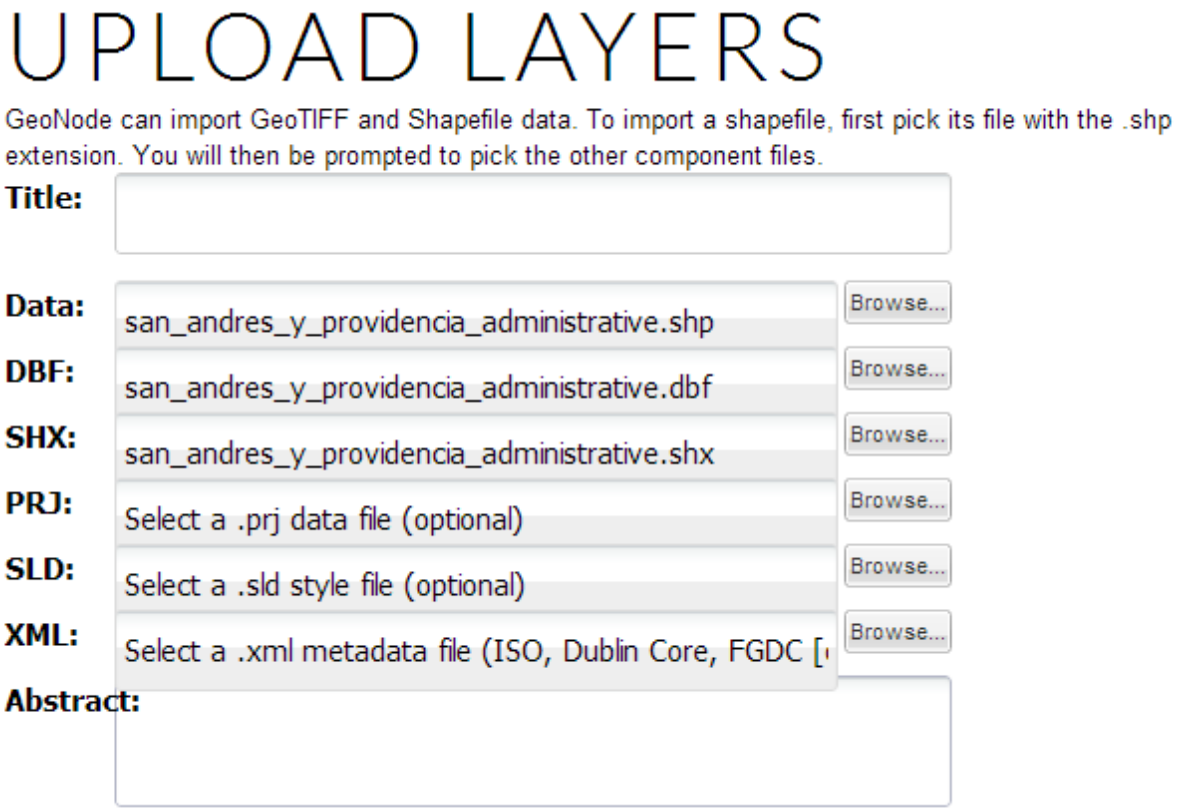

Figure 3.5: *Files ready for upload*

5. GeoNode has the ability to restrict who can view, edit, and manage layers. On the right side of the page, under *Who can view and download this data*, select *Any registered user*. This will ensure that anonymous view access is disabled.
6. In the same area, under *Who can edit this data*, select your username. This will ensure that only you are able to edit the data in the layer.

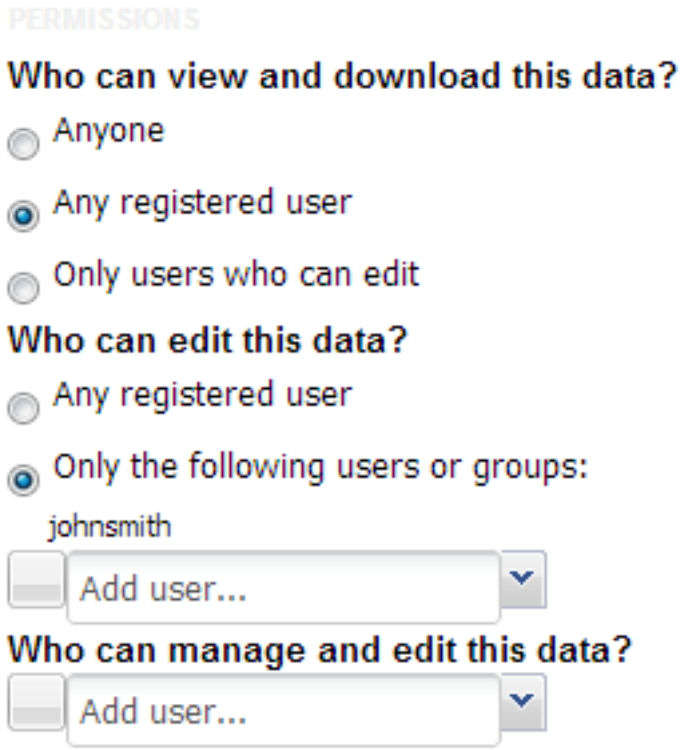

Figure 3.6: *Permissions for new layer*

7. Click *Upload* to upload the data and create a layer. A dialog will display showing the progress of the upload.

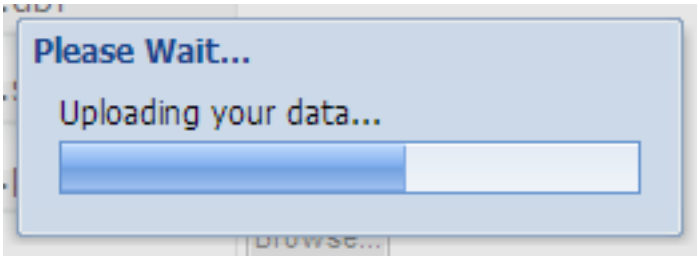

Figure 3.7: *Upload in progress*

Your layer has been uploaded to GeoNode.

3.2 Layer information

After upload, another form will displaying, containing metadata about the layer. Change any information as desired, and then click *Update* at the very bottom of the form.

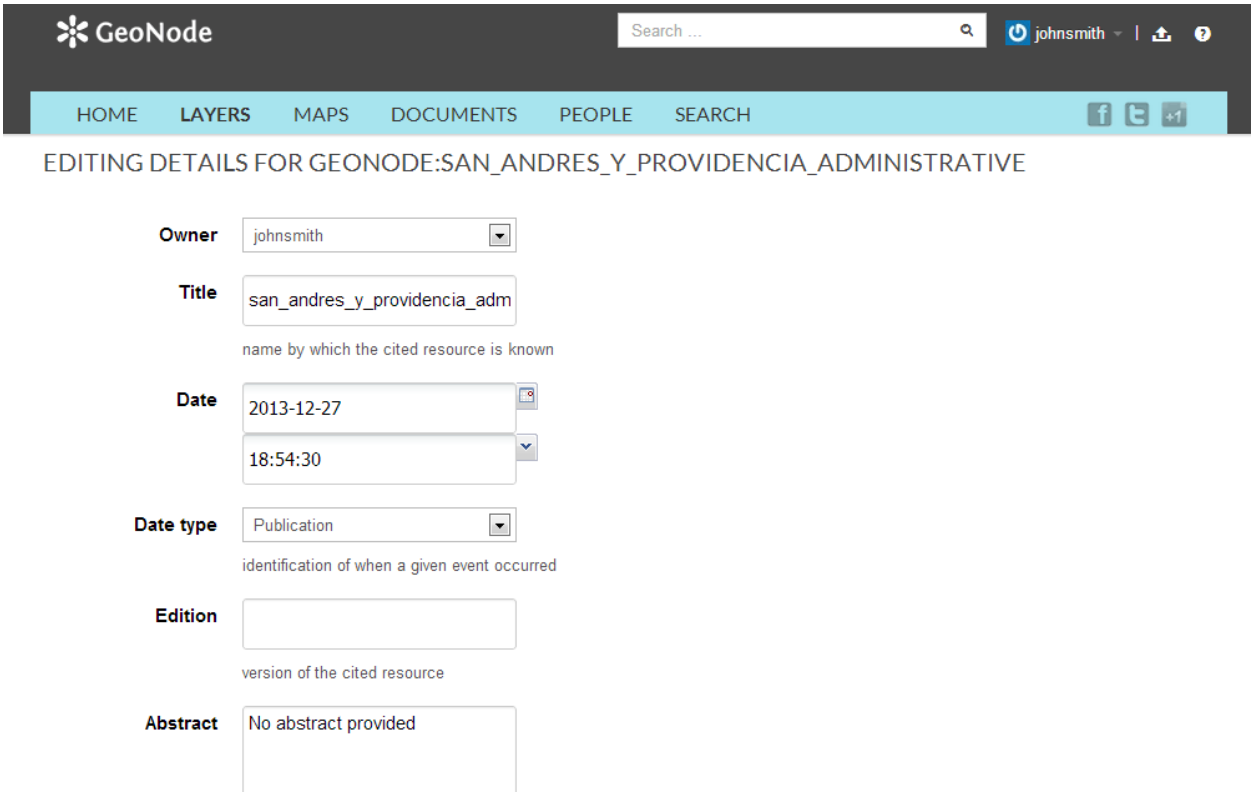

Figure 3.8: *Layer metadata*

After the update, the layer will display in a preview window.

This page contains lots of options for managing this layer. Let's look at a few of them:

3.2.1 Downloads

At the top of the page there are two buttons titled *Download Layer* and *Download Metadata*. These buttons provide access to the ability to extract geospatial data and metadata from within GeoNode. In this way, GeoNode allows for two way data access; one can import as well as export data.

1. Click the *Download Layer* button. You will see a list of options of the supported export formats.

1. Click the option for *Zipped Shapefile*.

2. GeoNode will process the request and bring up a Save As dialog. Save this file to your computer, and note how it is the same content as was uploaded.

3.2.2 Metadata

1. Scroll down the page toward the bottom. Five tabs are available: *Info*, *Attributes*, *Share*, *Ratings*, and *Comments*. The info tab is already highlighted, and presents basic information about the layer, of the kind that was seen on

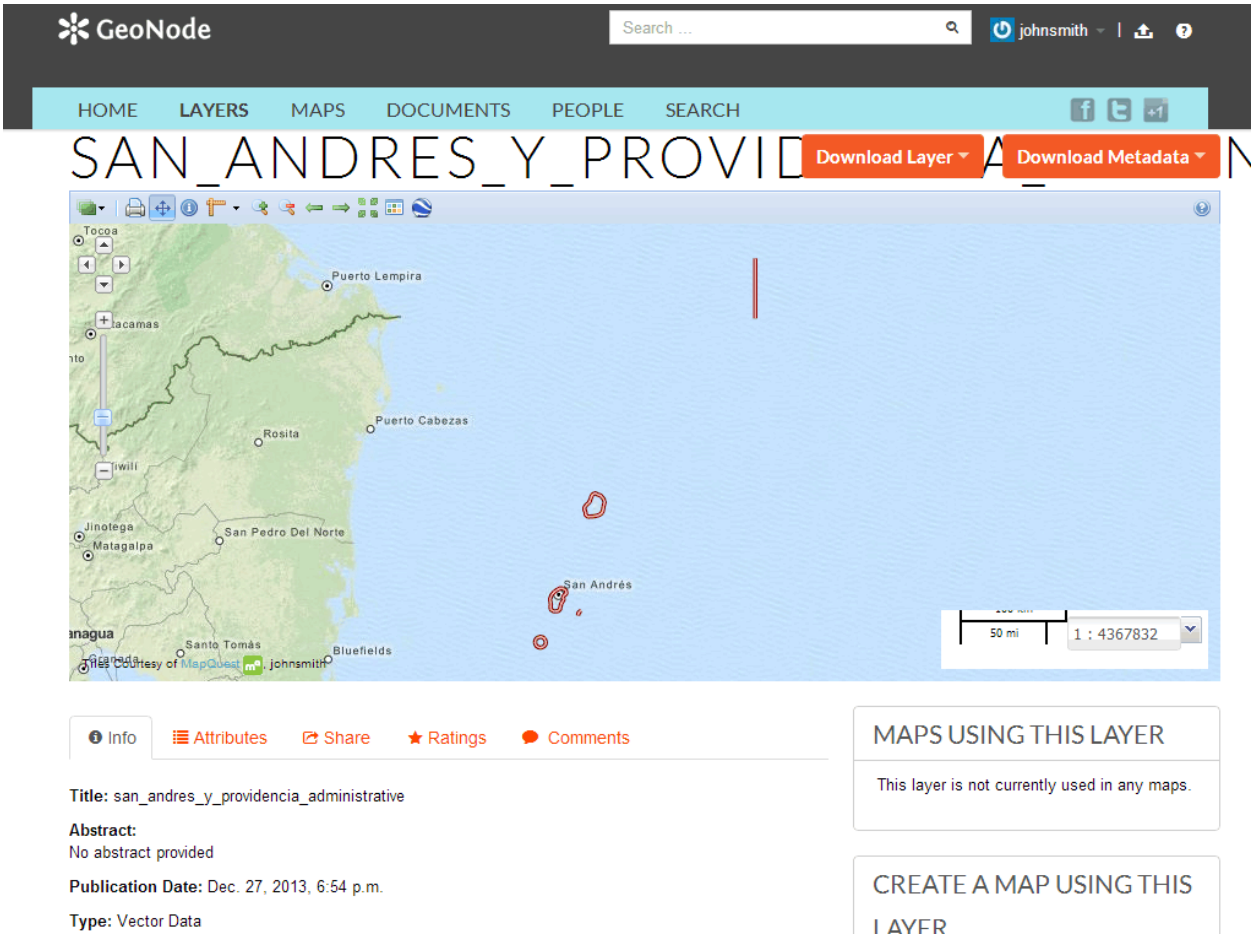

Figure 3.9: *Layer preview*

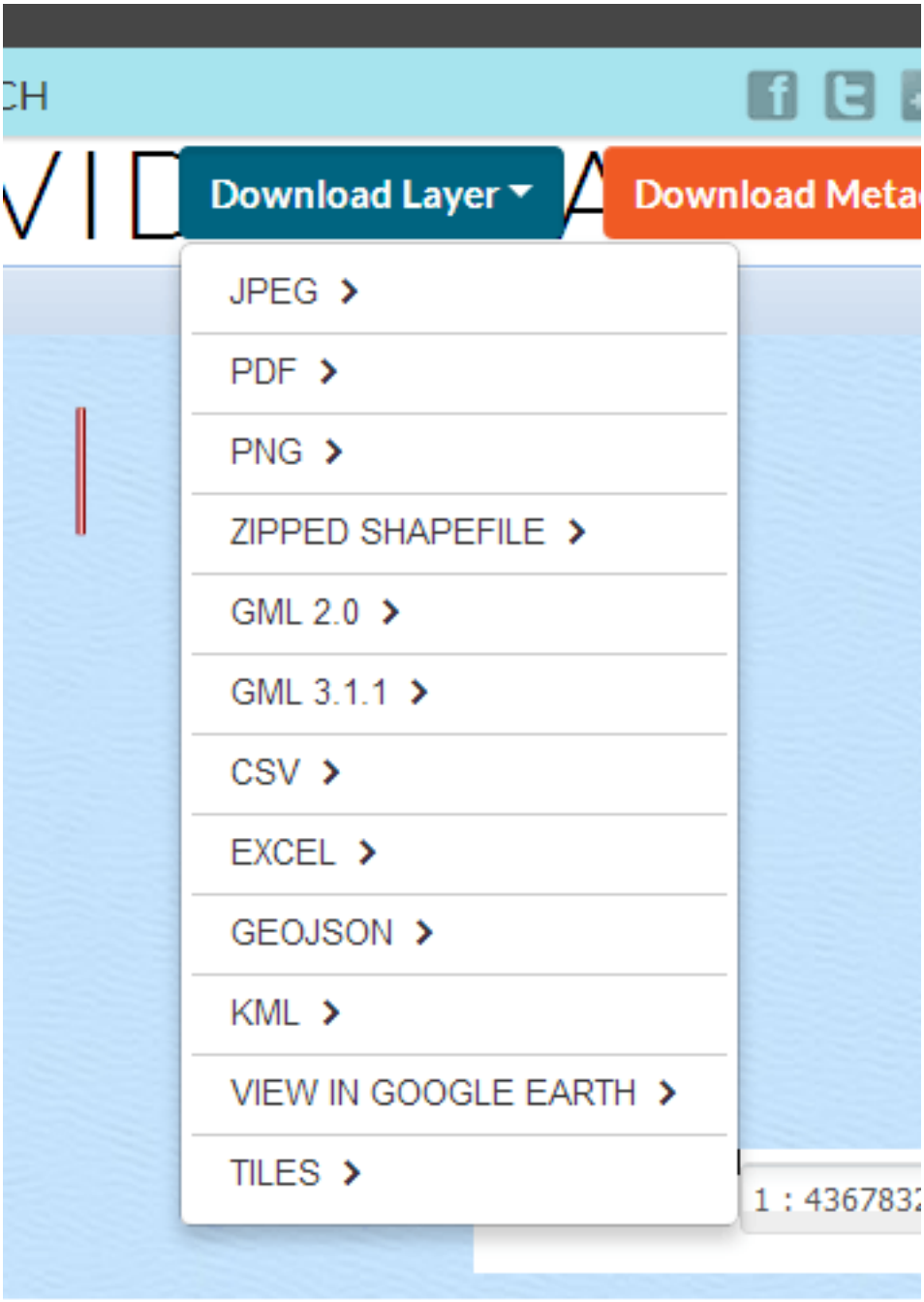

Figure 3.10: *Available export formats*

the layer list page.

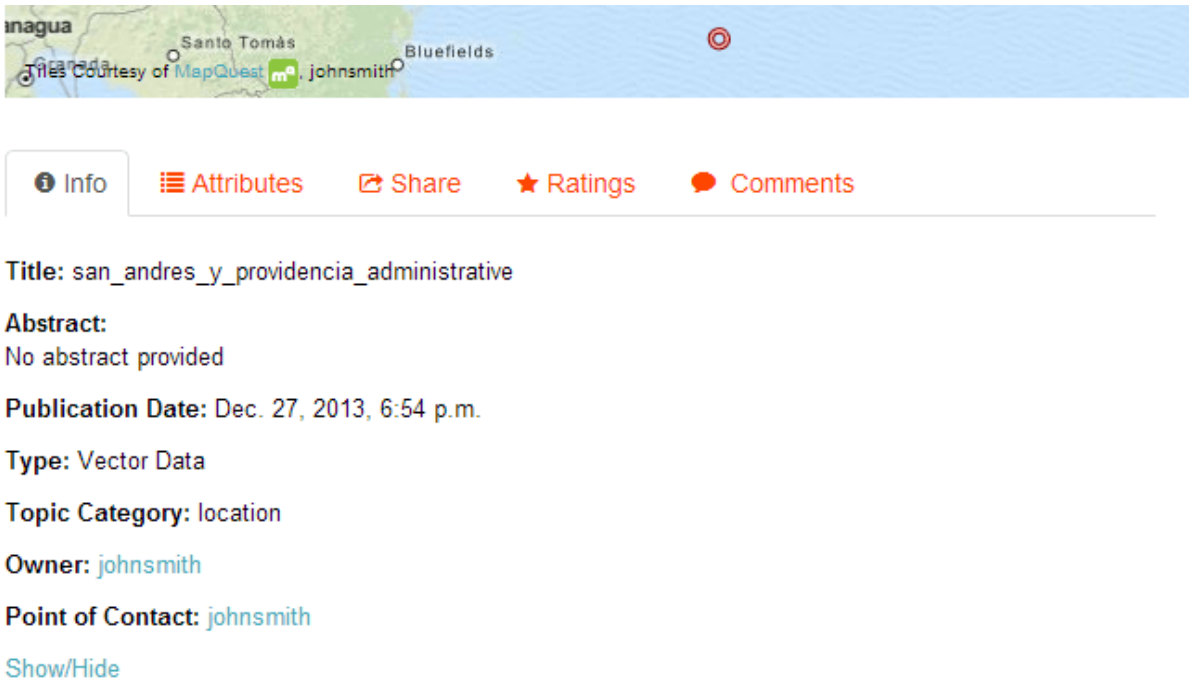

Figure 3.11: *Layer Info tab*

2. Click the *Attributes* tab. This lists the attributes of the layer, including statistics such as mean and standard deviation (where applicable).
3. Click the *Ratings* tab. This tab allows you (and others viewing this page) to rate this layer. Ratings can be based on quality, accuracy, or any other metric. Click on the appropriate star to rate this layer.
4. Click the *Comments* tab. This tab allows you to leave a comment for other viewing this layer.
5. Click the *Add Comment* button and enter a comment.
6. When finished, click *Submit Comments*

3.3 Sharing layers

GeoNode has the ability to restrict or allow other users to access a layer.

3.3.1 Anonymous access

1. Go to the layer preview of the first layer uploaded, and copy the URL to that preview page.

Note: The URL should be something like: `http://GEONODE/layers/geonode:san_andres_y_providencia_adm`

Figure 3.12: *Layer Ratings tab*

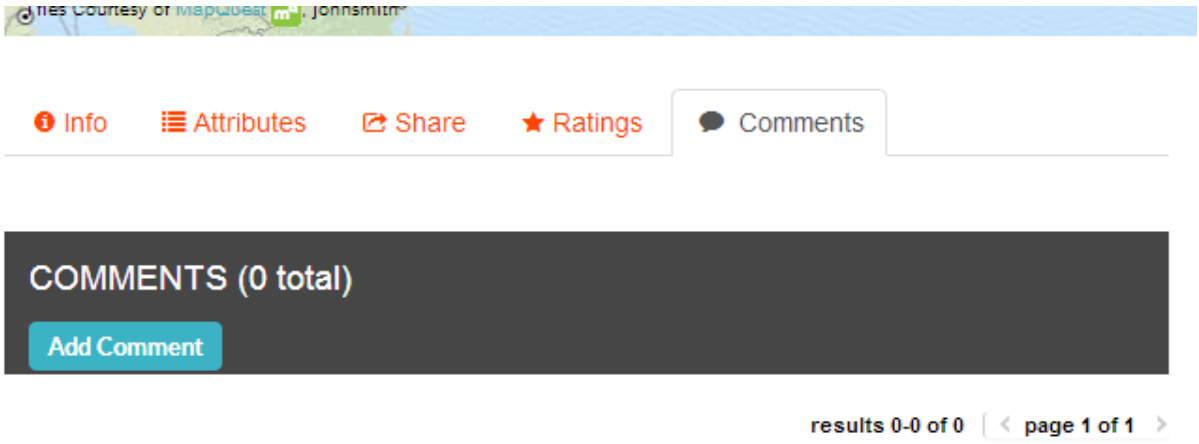

Figure 3.13: *Layer Comments tab*

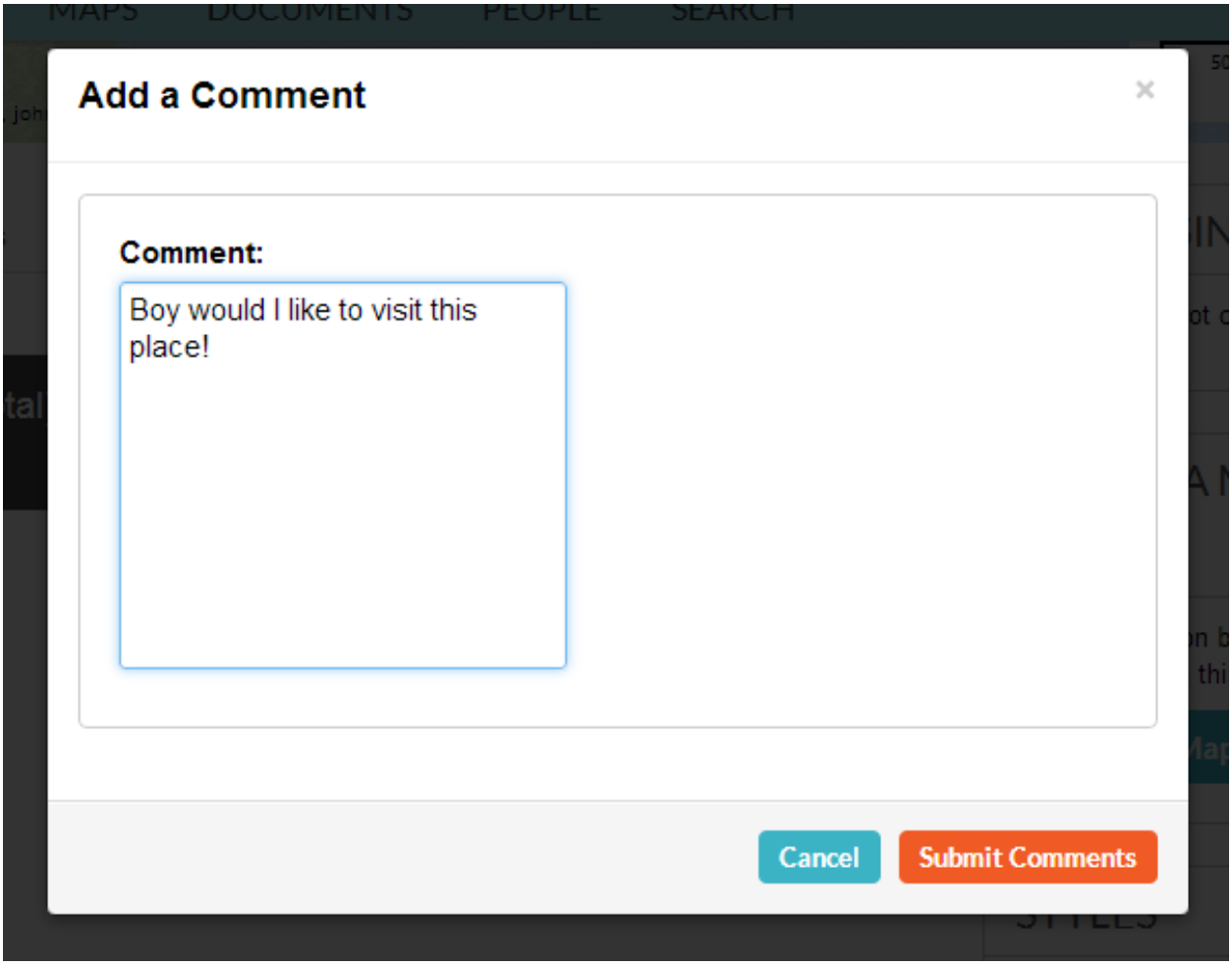

Figure 3.14: *Adding a new comment*

Figure 3.15: *New comment posted*

2. Now log out of GeoNode by clicking on your profile name and selecting *Log out*.

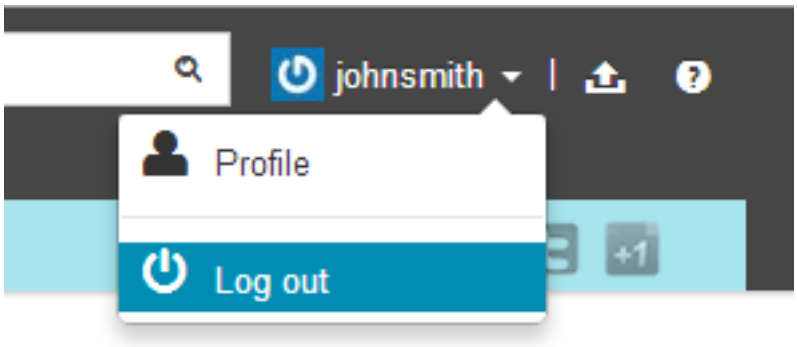

Figure 3.16: *Log out*

3. When asked for confirmation, click the *Log out* button.

Figure 3.17: *Confirming log out*

4. Now paste the URL copied about into your browser address bar and navigate to that location.
5. You should receive a 403 error in your browser. This is because when this layer was first uploaded, we set the view properties to be any registered user. Once logged out, we are no logner a registered user and so are not able to see or interact with the layer.

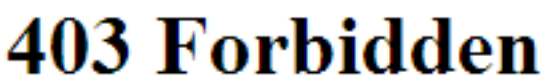

Figure 3.18: *Unable to view this protected layer*

3.3.2 Sharing with other users

3.4 Adding more layers

We've uploaded one layer so far. There is one more layer in the `data` directory associated with this workshop called `san_andres_y_providencia_poi.shp`.

1. Upload this layer, referring to the directions on *uploading a layer*. As a difference, leave the permissions set to their default values.

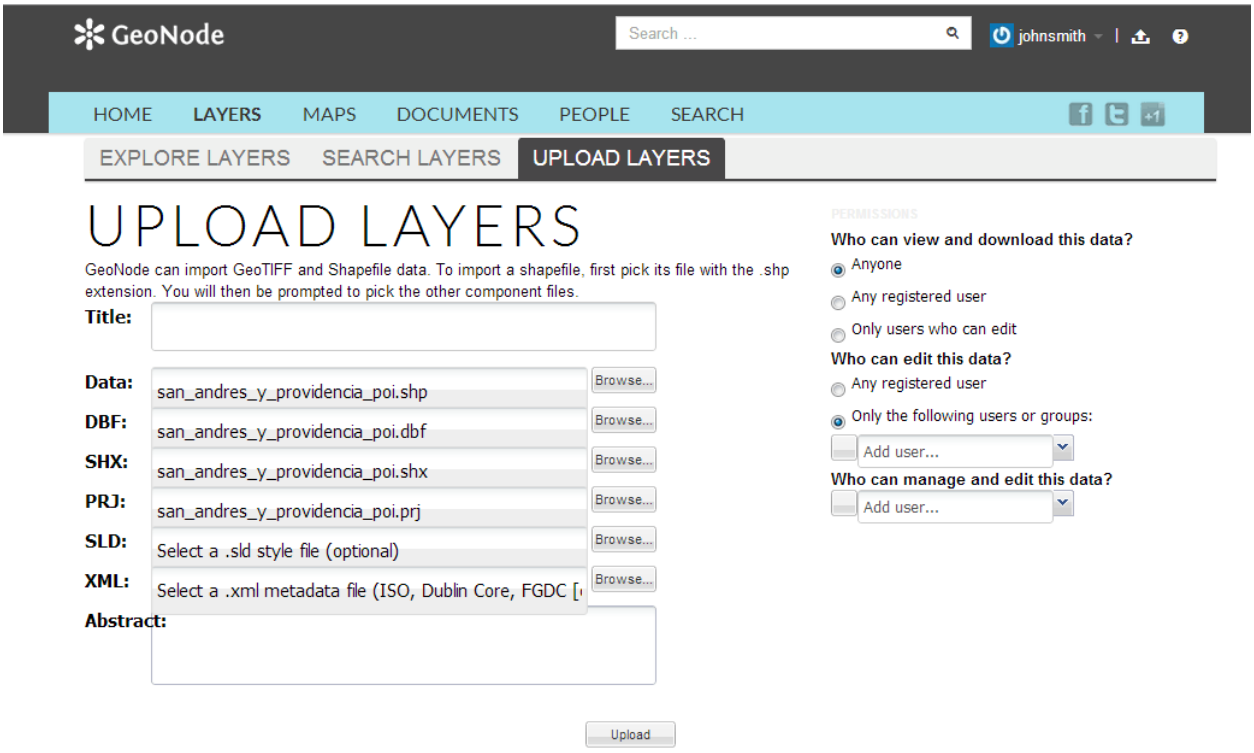

Figure 3.19: *Uploading the layer*

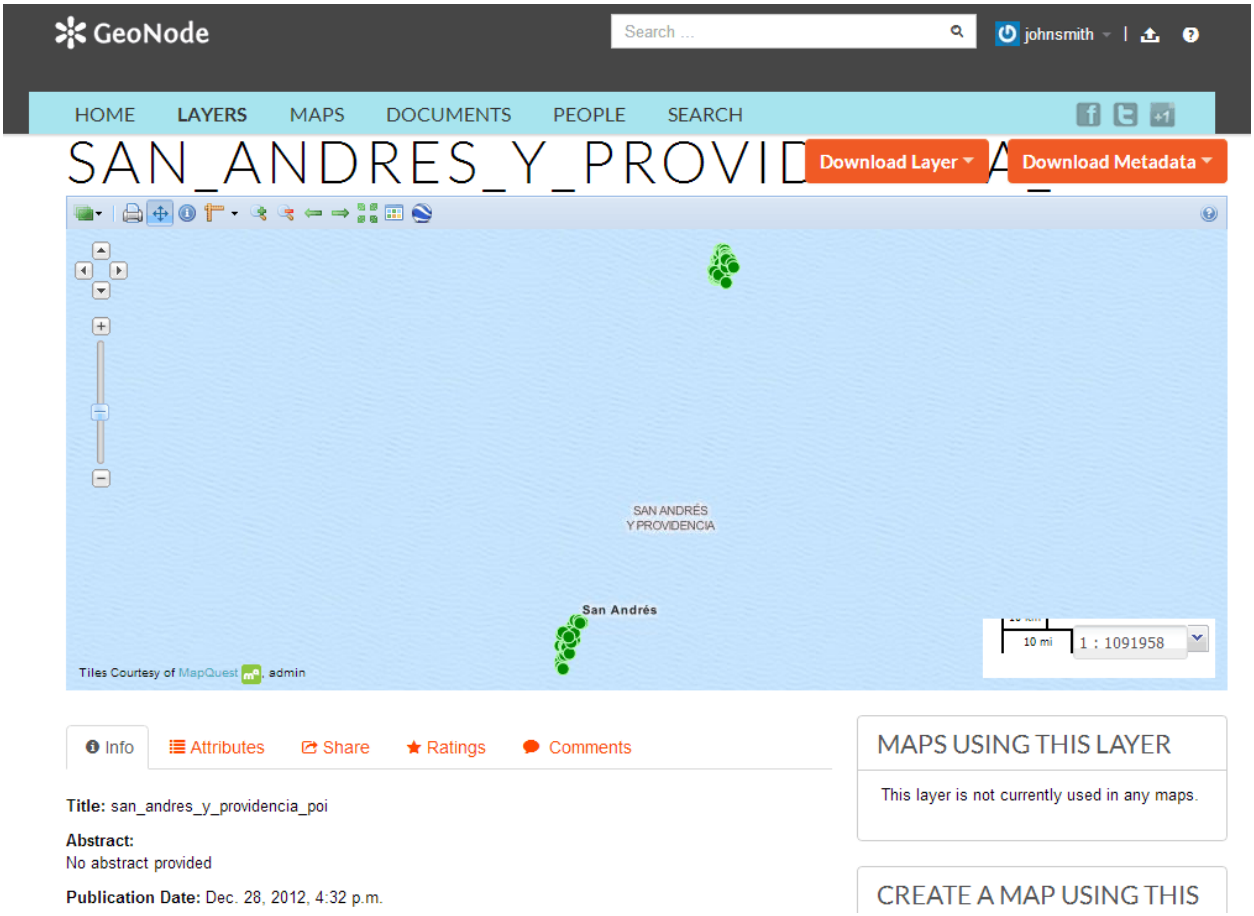

Figure 3.20: *Finished upload*

CHAPTER

FOUR

MANAGING MAPS

The next primary component of GeoNode is the **map**. Maps are comprised of various layers and their styles. Layers can be both local layers in GeoNode as well as remote layers either served from other WMS servers or by web service layers such as Google or MapQuest.

GeoNode maps also contain other information such as map zoom and extent, layer ordering, and style.

In this section, we'll create a map based on the layers uploaded in the previous section, combine them with some existing layers and a remote web service layer, and then share the resulting map for public viewing.

4.1 Creating a map

4.1.1 Adding layers

1. Click the *Maps* link on the top toolbar. This will bring up the list of maps.
2. Currently, there aren't any maps here, so let's add one. Click the *Create a New Map* button.
3. A map composition interface will display.

   In this interface there is a toolbar, layer list, and map window. The map window contains the MapQuest OpenStreetMap layer by default. There are other service layers available here as well: Blue Marble, Bing Aerial With Labels, MapQuest, and OpenStreetMap.
4. Click on the New Layers button and select Add Layers.
5. Select all of the San Andreas layers by clicking the top entry and Shift-clicking the bottom one. Click *Add Layers* to add them all to the map.

   Note: This selection includes not only the two layers uploaded in the previous section, but also the layers that were already hosted on GeoNode at the beginning of the workshop.

   ---
6. The layers will be added to the map. Click *Done* (right next to *Add Layers* at the bottom) to return to the main layers list.

4.1.2 Saving the map

1. While we still have some work to do on our map, let's save it so that we can come back to it later. Click on the *Map* button in the toolbar, and select *Save Map*.
2. Enter a title and abstract for your map.

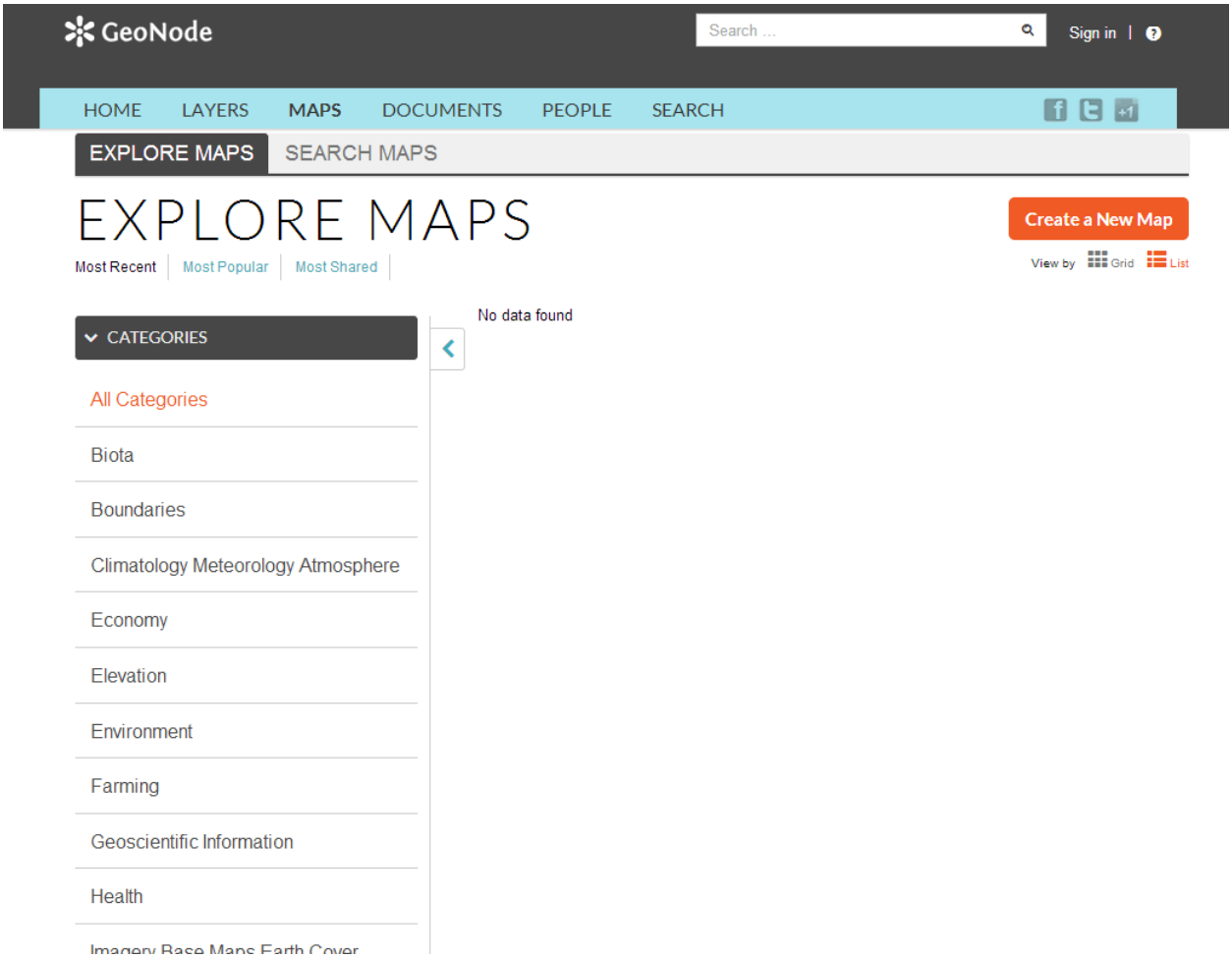

Figure 4.1: *Maps page*

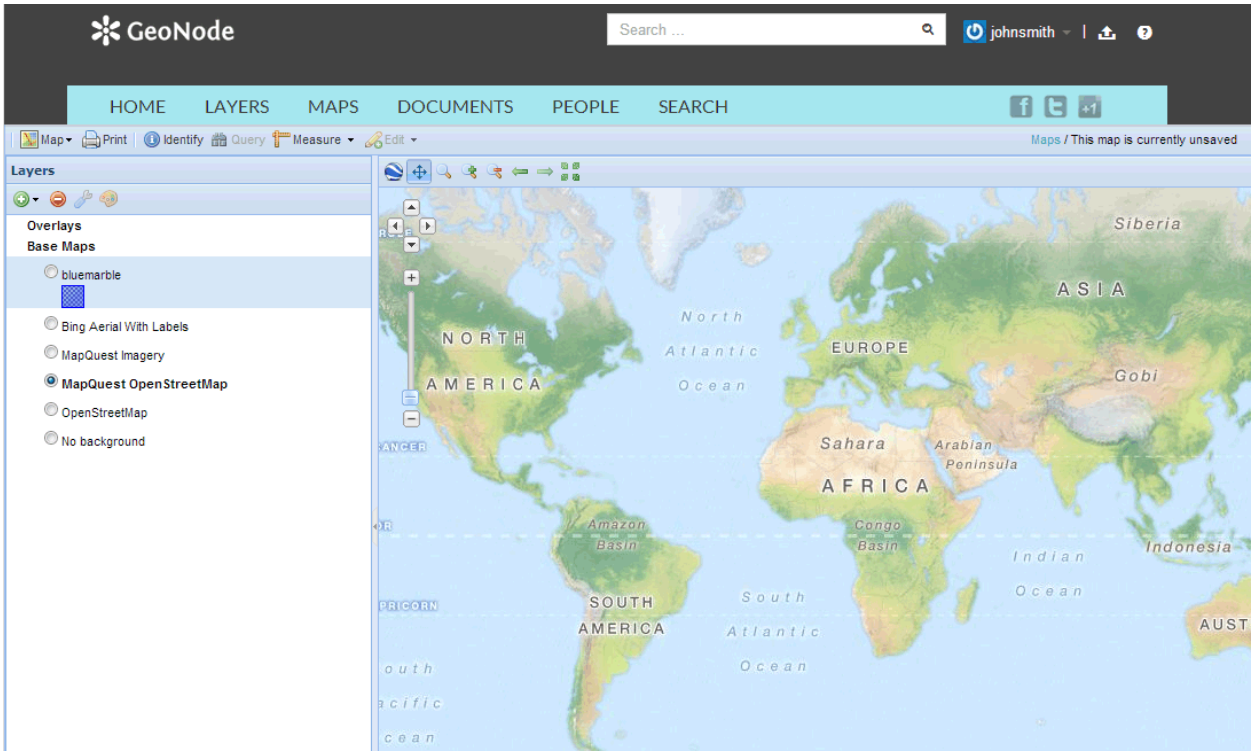

Figure 4.2: *Create maps interface*

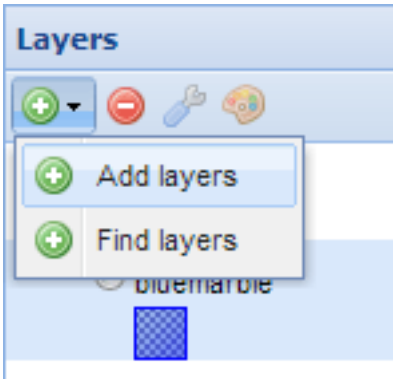

Figure 4.3: *Add layers link*

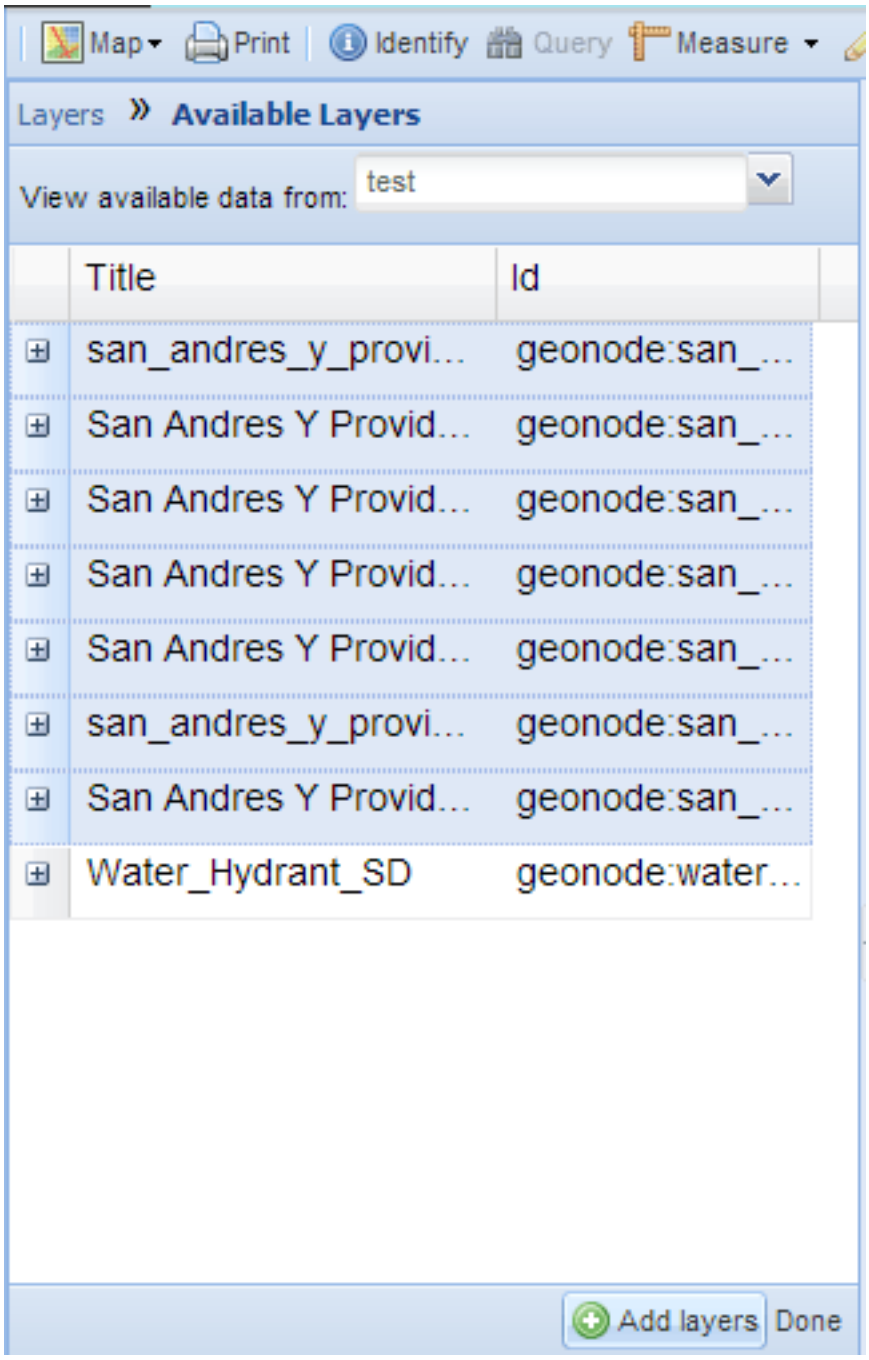

Figure 4.4: *Selecting layers*

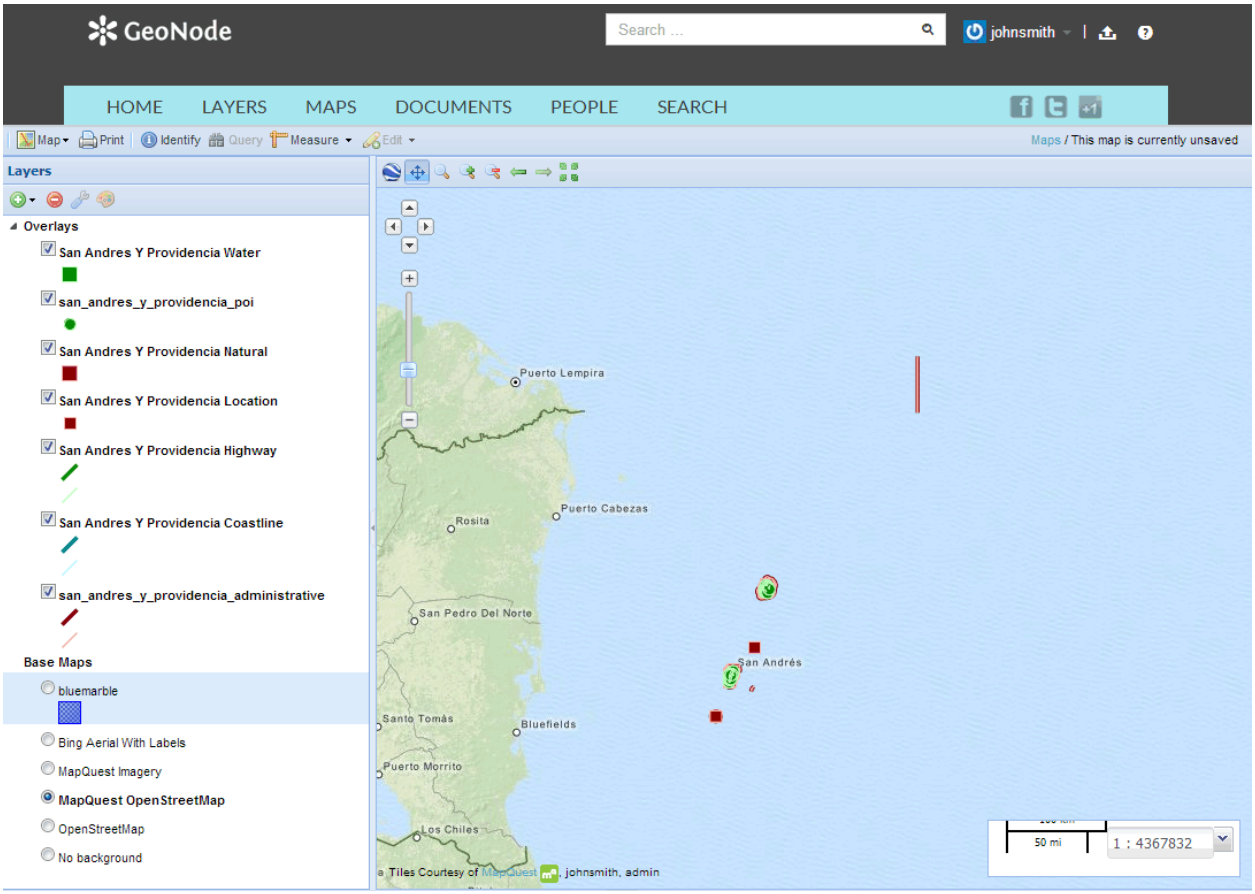

Figure 4.5: *Layers added to the map*

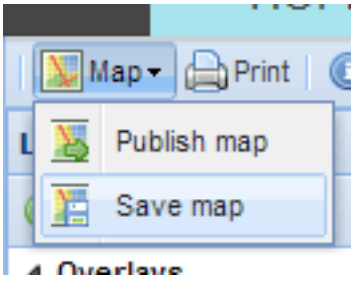

Figure 4.6: *Save map link*

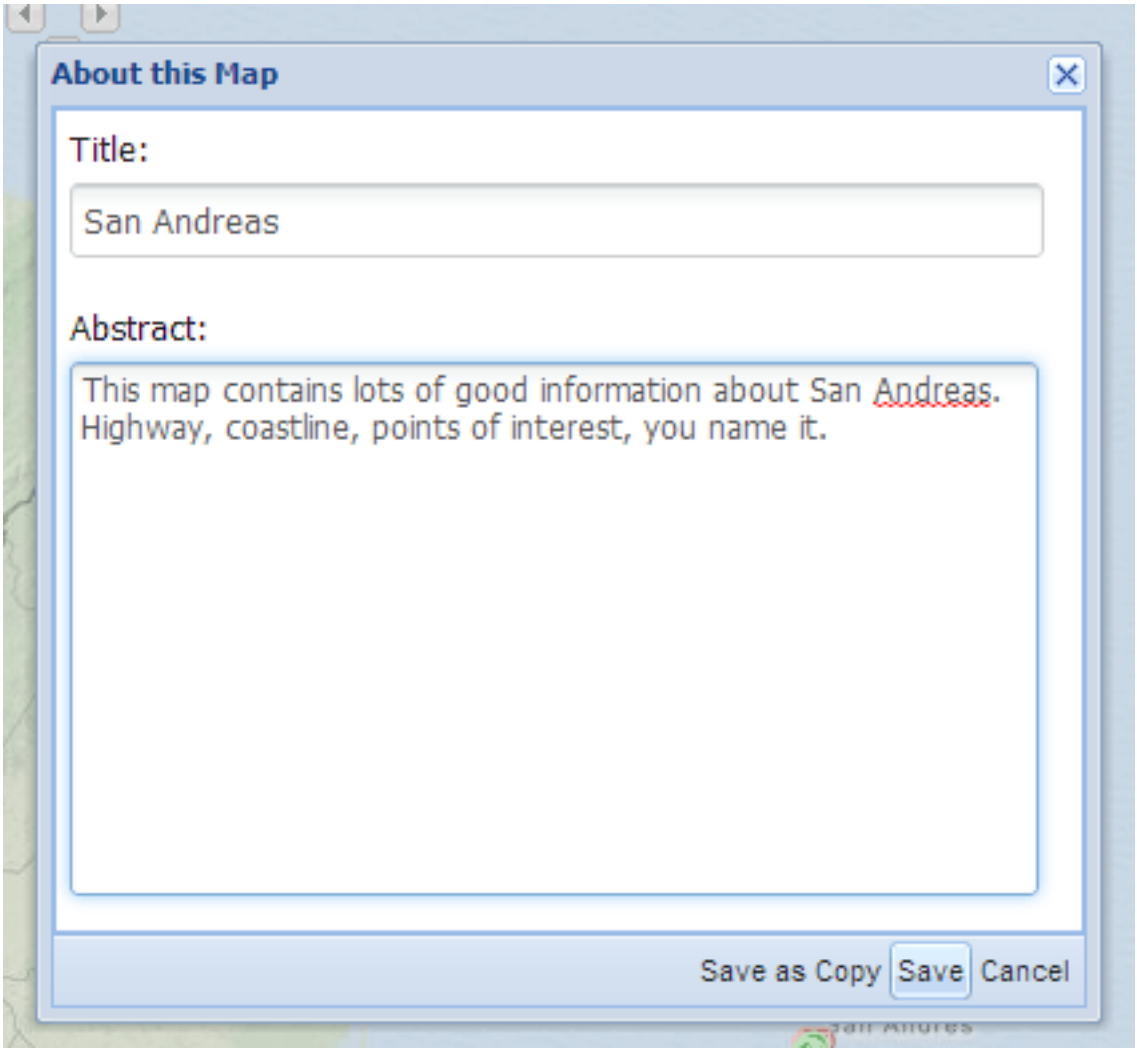

Figure 4.7: *Save map dialog*

3. Click *Save*. Notice that the link on the top right of the page changed to reflect the map's name.

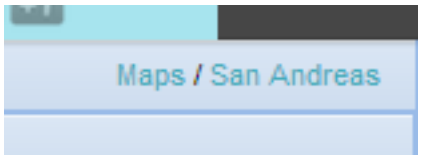

Figure 4.8: *Saved map name*

This link contains a permalink to your map. If you open this link in a new window, your map will appear exactly as it was saved.

4.2 Styling layers

In this interface, we can pause in our map creation and change the style of one of our uploaded layers. GeoNode allows you to edit layer styles graphically, without the need to resort to programming or requiring a technical background.

We'll be editing the `san_andres_y_providencia_poi` layer.

1. In the layer list, uncheck all of the layers except the above, so that only this one is visible (not including the base layer).
2. Zoom in closer using the toolbar or the mouse.
3. In the layer list, click to select the remaining layer and then click the palette icon (*Layer Styles*). This will bring up the style manager.
4. This layer has one style (named the same as the layer) and one rule in that style. Click the rule (*Untitled 1*) to select it, and then click on *Edit* below it.
5. Edit the style. You can choose from simple shapes, add labels, and even adjust the look of the points based on attribute values and scale.
6. When done, click *Save*, then click on the word *Layers* to return to the layer list.

4.3 Share your map

Now let's finish our map.

1. Check the box next to the *highway* layer to activate it. If it is not below the *POI* layer in the list, click and drag it down.
2. Make any final adjustments to the map composition as desired, including zoom and pan settings.
3. Click the *Map* button in the toolbar, and then click *Publish Map*.
4. The title and abstract as previously created should still be there. Make any adjustments as necessary, and click *Save*.
5. A new dialog will appear with instructions on how to embed this map in a webpage, including a code snippet. You can adjust the parameters as necessary.

Your map can now be shared.

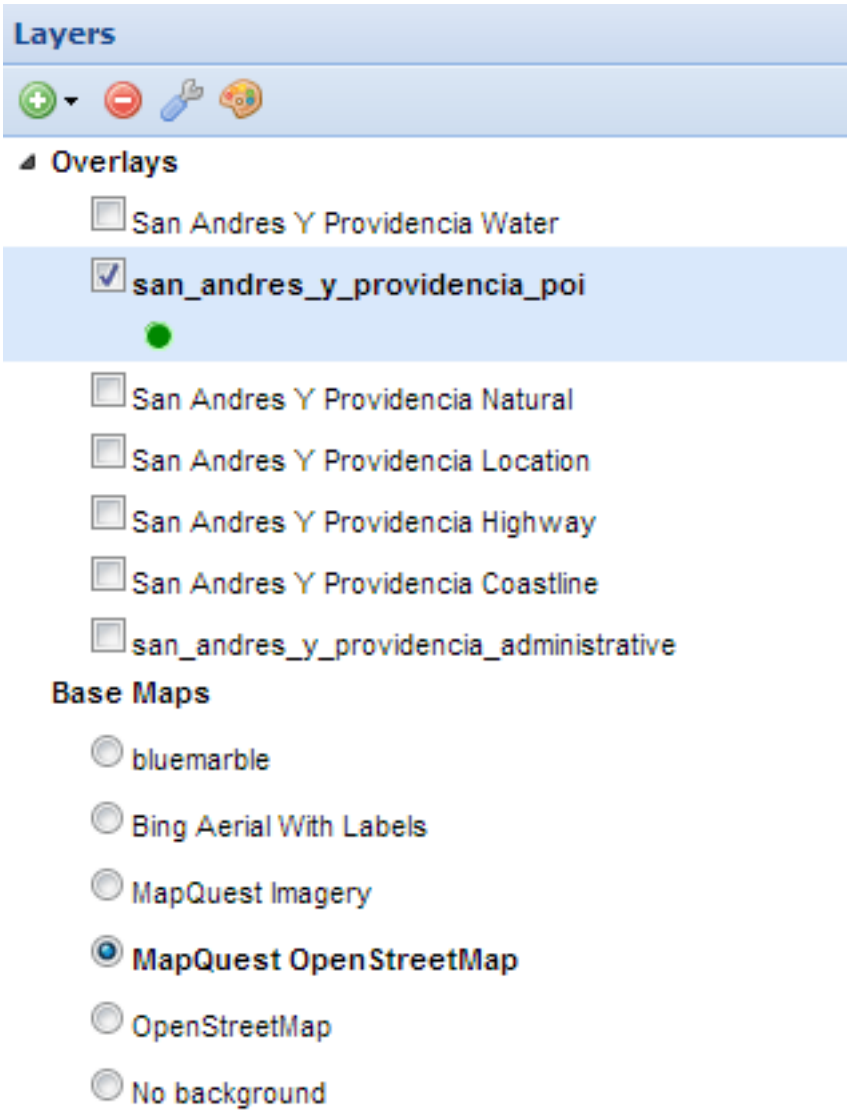

Figure 4.9: *Only one layer visible*

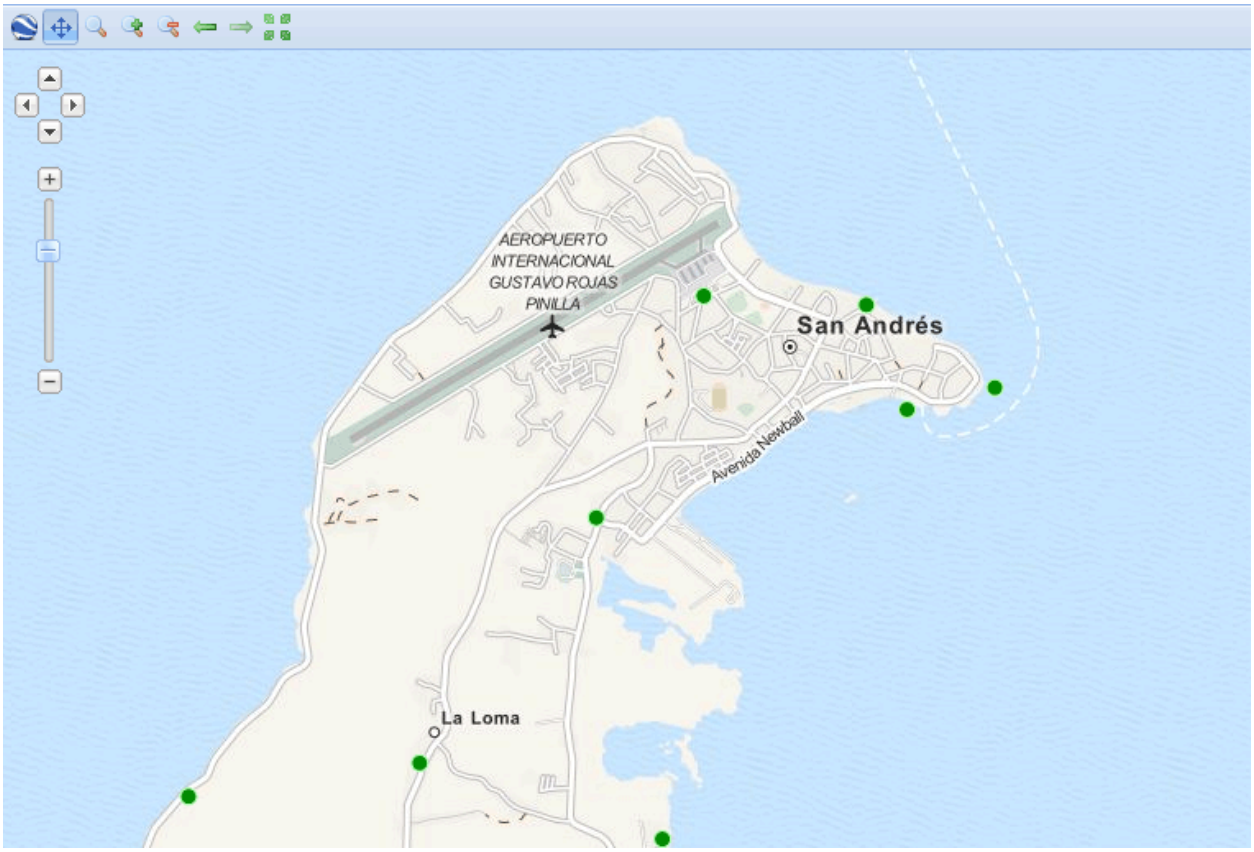

Figure 4.10: *Zoomed in to see the layer better*

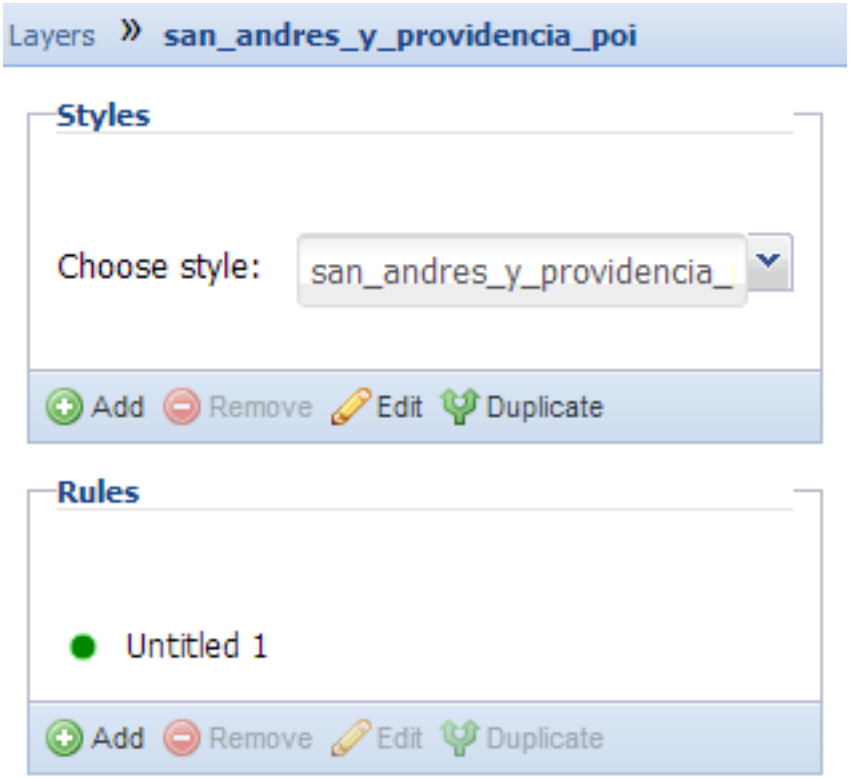

Figure 4.11: *Styles manager*

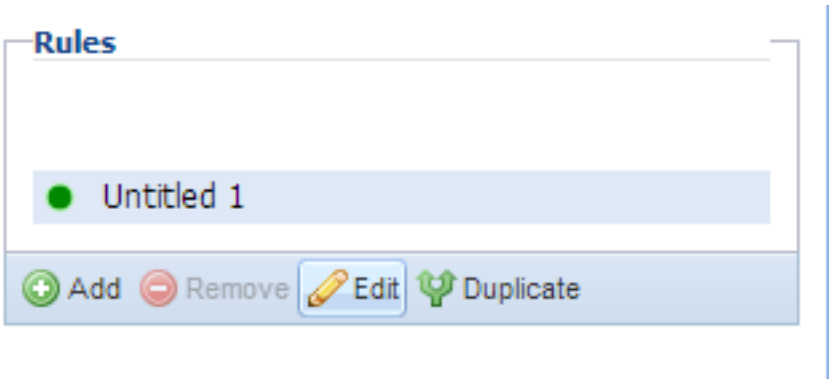

Figure 4.12: *Edit style rule link*

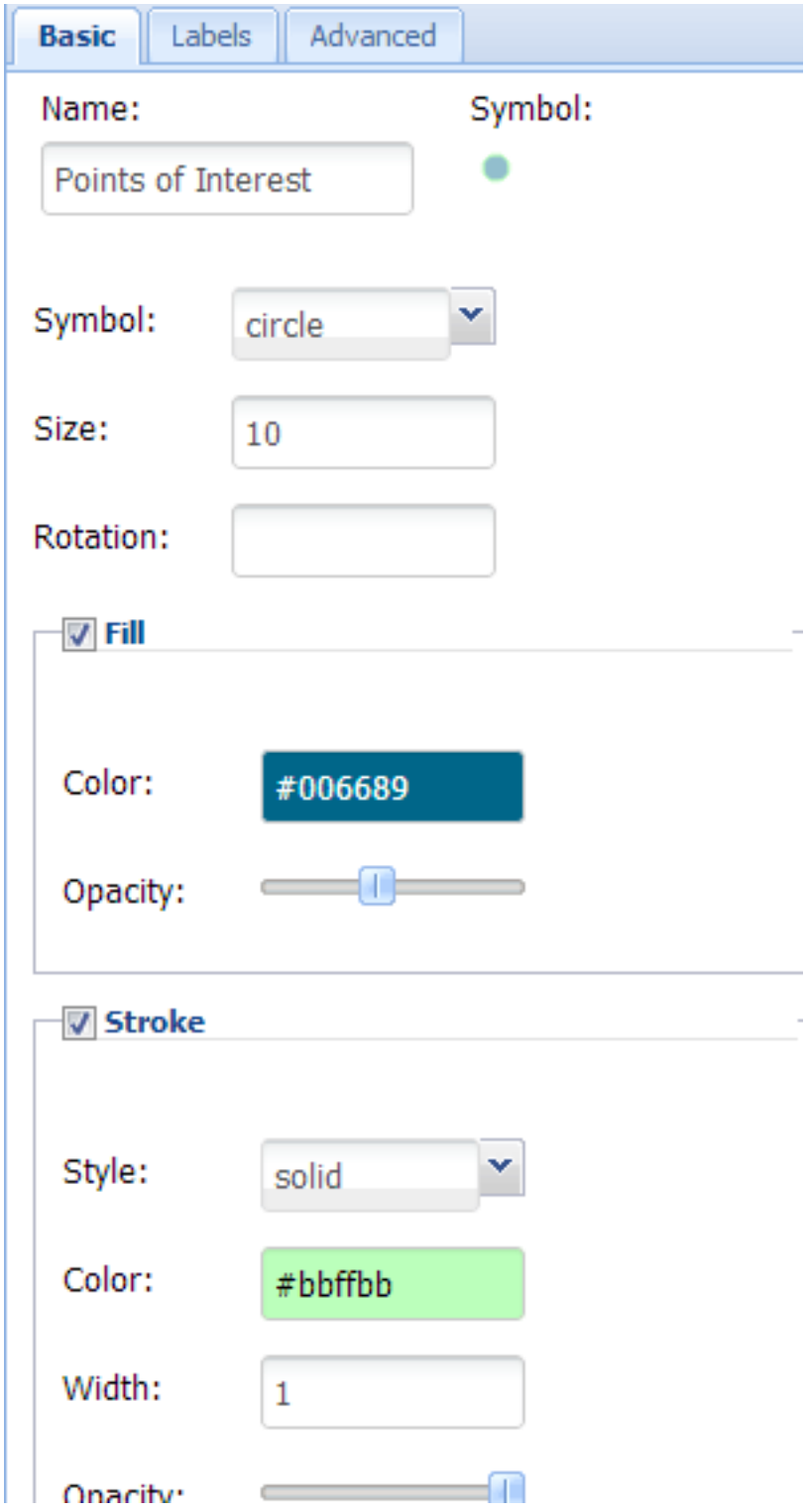

Figure 4.13: *Editing basic style rules*

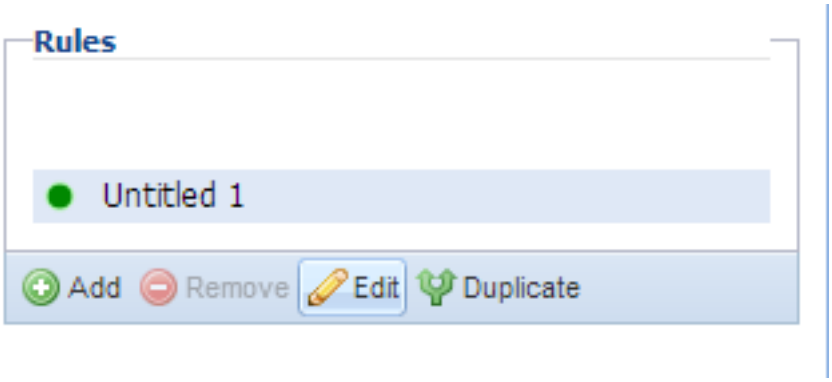

Figure 4.14: *Editing style labels*

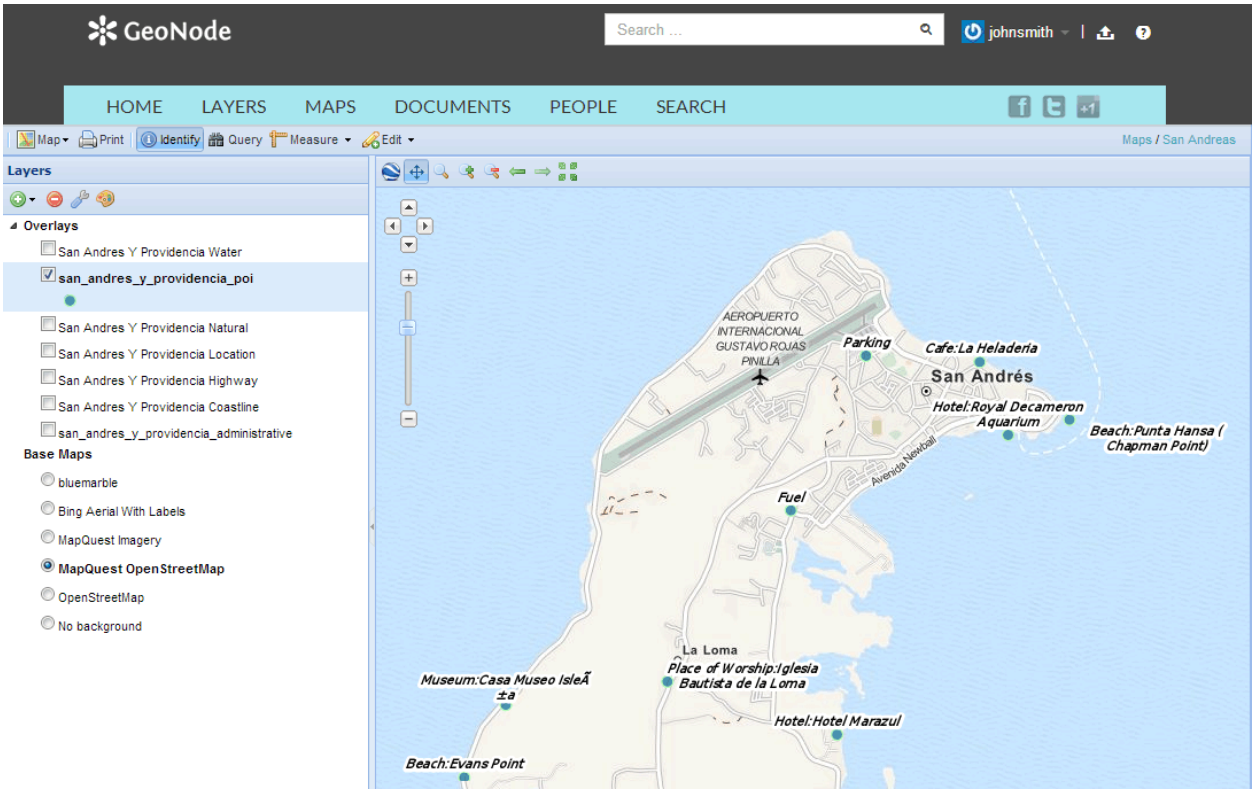

Figure 4.15: *Styled layer*

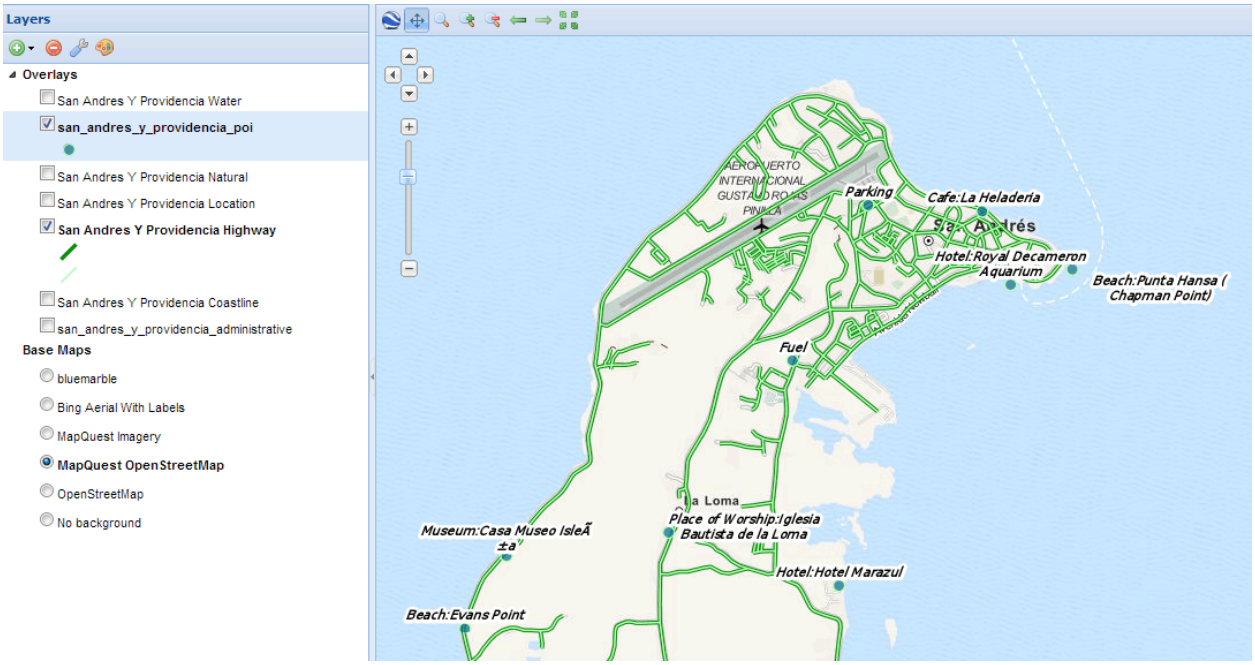

Figure 4.16: *Adjusting map composition*

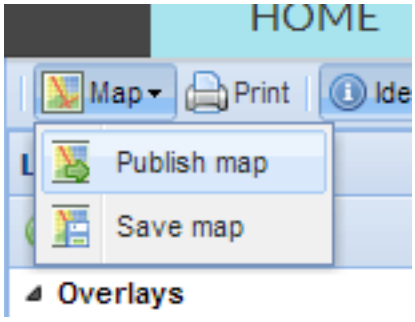

Figure 4.17: *Publish map link*

Figure 4.18: *Map publishing options*

CHAPTER

FIVE

FOR MORE INFORMATION

Introduction Learn about GeoNode and tour the interface

Accounts and users Create an account in GeoNode and interact with other users

Managing layers Create and manage GeoNode layers

Managing maps Create and manage a GeoNode map

For more information Learn more about the GeoNode project and how to get involved