



**HEALTH
GEO LAB
COLLABORATIVE**

Supporting countries to use geospatial
data and technologies to achieve SDG 3

Starter kit - ArcGIS Online

Version 2 (25.05.2019)



In collaboration with and with the support of:



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Revision History

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1.1	29 January 2018	Conversion to HGLC document	Steeve Ebener
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Purpose and audience

The purpose of this document is to guide new users in their discovery ArcGIS Online platform.

The audience for this document is any individual or institution who would like to learn about and/or has an Esri subscription to access the ArcGIS Online.

Please refer to the Resources page on the HGLC website for more information in this regard.¹

Abbreviations

ADB	Asian Development Bank
AeHIN	Asia eHealth Information Network
AGOL	ArcGIS Online
Esri	Environmental Systems Research Institute
GIS	Geographic Information System
HGLC	Health GeoLab Collaborative
SDGs	Sustainable Development Goals
WHO	World Health Organization

¹ <https://healthgeolab.net/resources/access-to-proprietary-geospatial-technology/>

1. Background

The Health GeoLab Collaborative (HGLC)² is a collective of institutions and individuals sharing the same vision - for low- and middle-income countries in Asia and the Pacific to fully benefit from the power of geospatial data and technologies to reach the health related SDG 3 - and ready to engage their respective skills, experience, and resources to achieve it.

The HGLC has been established and builds on the work done as well as the network and documents developed through the activities of the AeHIN GIS Lab over the 2016-2017 period.

The HGLC uses the 4Ts (Training, Tooling, Testing and Teaming) approach to strengthen in-country capacity. The present starter kit has been developed as part of this approach and with the objective to be used by the largest number of users possible.

This starter kit is a living document made to evolve based on the inputs received from the users. Please don't hesitate to contact us at info@healthgeolab.net if you have any suggestions for improvement.

Should you use this document as part of your activities and would like to have your organization recognized as one of document's users, please contact us at the email address provided above.

2. Introduction

In an effort to help the health sector benefit from GIS technology, Esri provides opportunity to Ministries of Health of eligible countries to access Esri technology through highly discounted software bundles or for free through the Health and Human Services Grant Program³.

While Esri provides access to a large number of GIS solutions, the present kit focuses on one of its online products, ArcGIS Online (AGOL), and uses the HGLC ArcGIS Online platform as an example.

Through ArcGIS Online, users can discover GIS without having to install any software on their computer and also access all the data, maps and applications shared by Esri and the HGLC community.

3. What is ArcGIS Online?

ArcGIS Online is a collaborative web GIS that allows you to use, create, and share geospatial data, maps, and applications as well conduct spatial analysis through the internet.

² <http://healthgeolab.net>

³ <https://healthgeolab.net/resources/access-to-proprietary-geospatial-technology/>

While ArcGIS Online does not give access to all the capacities of ArcGIS Desktop, it already represents the most cost-effective solution for creating an online and collaborative working environment. In addition to that, ArcGIS Online's capacities can be extended through the direct link that exists with ArcGIS Desktop.

4. Getting started with the ArcGIS Online

In ArcGIS Online, you have access to different items from the Menu appearing on top of the window as follow:

Home Gallery Map Scene Groups Content Organization

The content and functionalities of each of these items are described in the following sections.

4.1 Home

The Home page is the first one to open once you log in to your account. It contains the featured maps and apps, and the banner or logo and a short description of your organization that you would have to setup through the setting functionality from the "Organization" page (See Section 4.7). Figure 4 shows the home page of the HGLC AGOL platform.

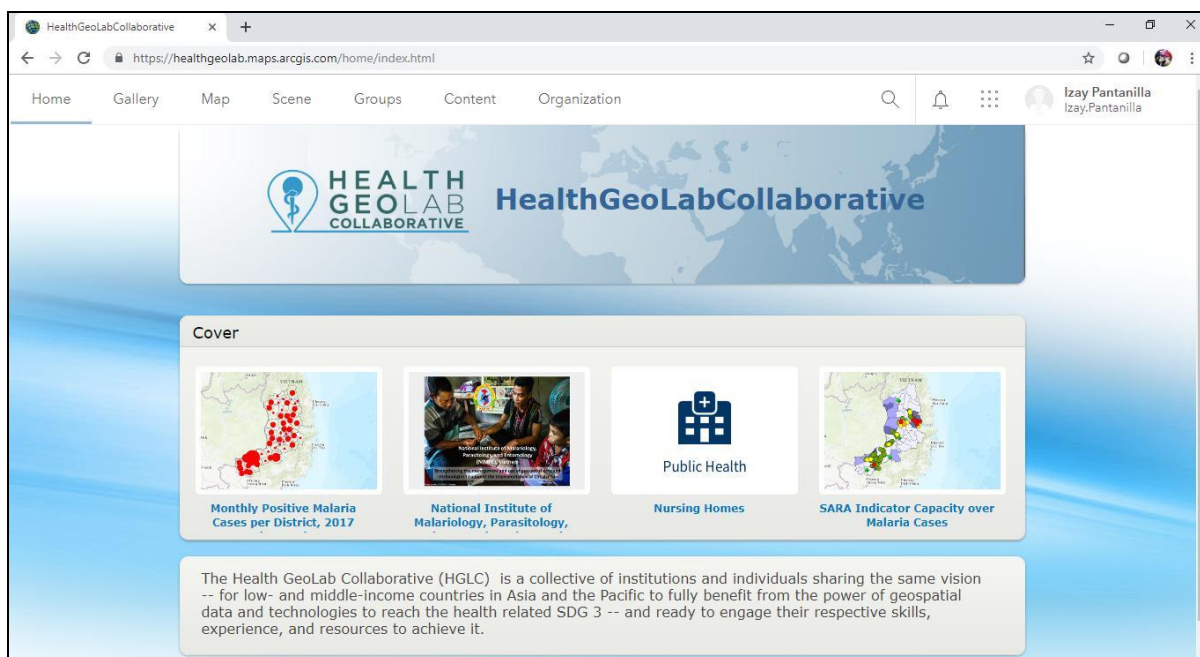


Figure 4 - Home page of the HGLC AGOL platform

4.2 Gallery

The Gallery page showcases the different maps, layers, scenes, apps, tools, and files you created/uploaded into your account and those created/uploaded and shared to your

organization or the public by your organization's members. Figure 5 shows the Gallery page of one of HGLC's member.

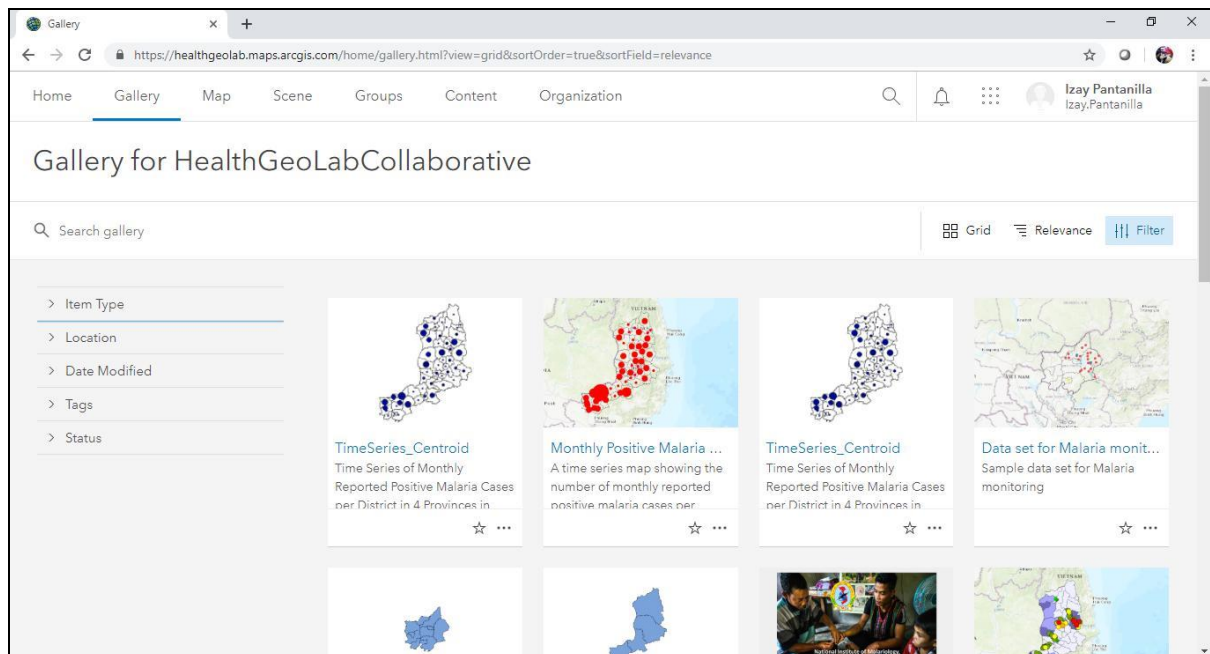
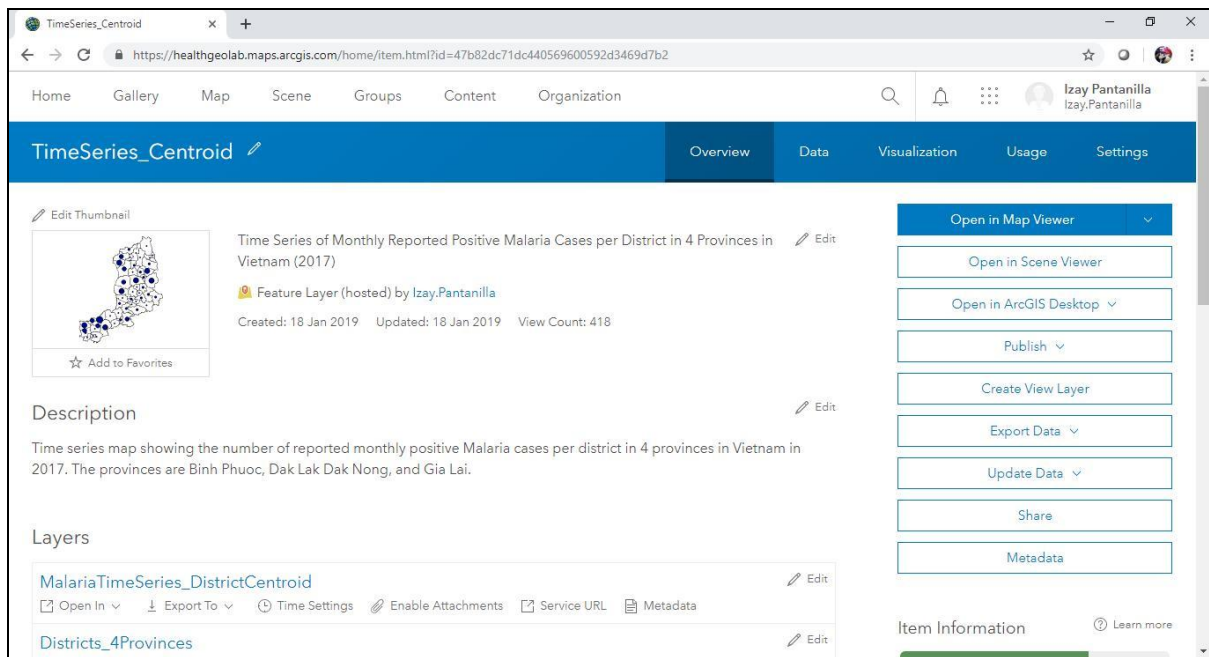


Figure 5 - Gallery page of one of HGLC's member

You can search the gallery for the items you want or you can click the *Filters* button on the upper right side to be able to filter the items by type, location, date modified, tags, or status (as shown above on the left side of the page).

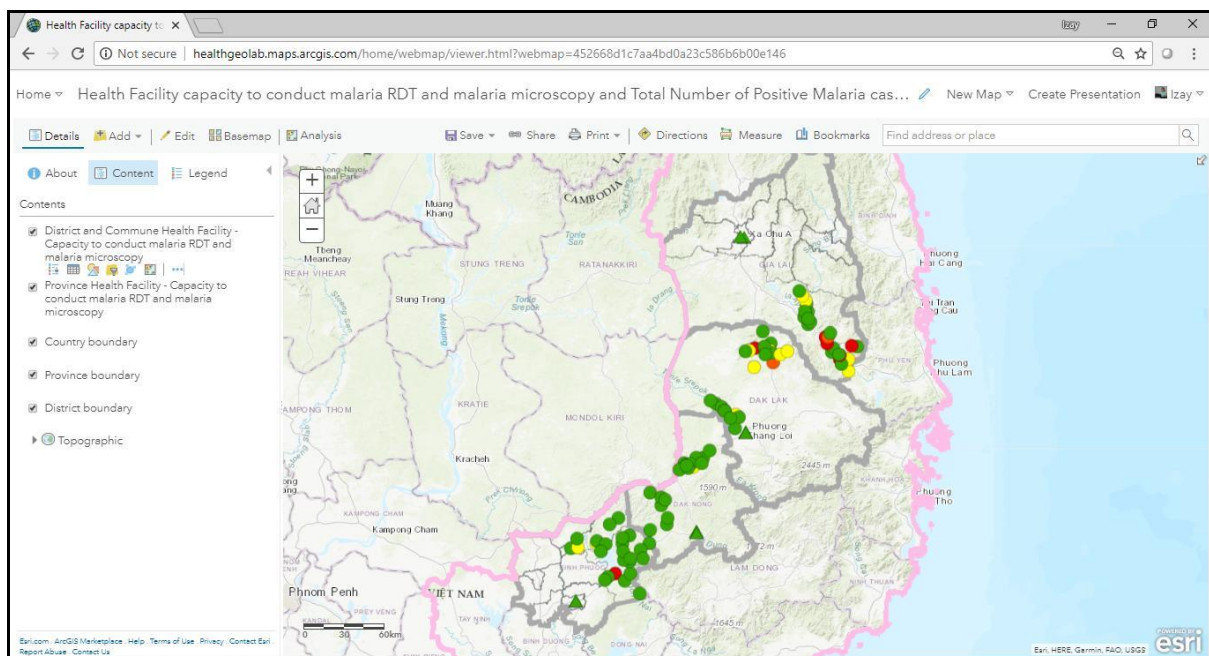
By clicking on an item's thumbnail image, it will open using the default ArcGIS program for the item type, e.g., maps and layer item types will open using Map Viewer while scene item type will open using Scene Viewer.

By clicking on an item's title (below the thumbnail image), the details page of the item will open. This page provides detailed description of the item (Figure 6). (The details page will also open when you click on an item in the Content section.)

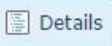


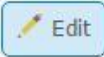
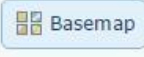
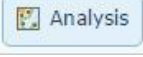


4.3 Map

The Map page or Map Viewer is the central application of ArcGIS Online and is the equivalent of ArcMap in ArcGIS Desktop. This is where you open existing maps or create new ones, add and visualize the different map layers, perform analyses, and save, share, or print your work (Figure 7).










The map page gives access to the following functionalities:

- The *Details* button () allows you to view the description of the layers, the list of different layers in the map, and their corresponding symbologies for the legend.
- The *Add* button () lets you add contents to your map by allowing you to search for layers, browse the Living Atlas layers, add layers from web or from file, and add map notes.
 - When you search for layers you can search your content, your favorites, your groups, the organization, Living Atlas or ArcGIS Online. To filter the content, click the  button.
 - The types of supported file you can upload from your computer or from the Web can be seen on the ArcGIS Online help page⁴. Note that if you add layers from file or the web in the map interface they will not be searchable items in the organization. To do this, you must add them in the content page.
 - Map Notes can be used to create basic shapes or annotate a map but should not be used to record data as they don't have a flexible attribute structure and cannot be used for analysis.
- The *Edit* button () appears if you have editing privileges and you have added an editable layer to the map. This allows you to add new features and their attributes. When the *Edit* button is activated, clicking on a feature will open its attribute window for editing.
- The *Basemap* button () allows you to choose from a selection of basemaps that you can add to your map.
- The *Analysis* button () appears if your role has the privileges to create, update, and update content; publish hosted features; and do spatial analysis – normally the administrator and publisher roles. This button allows you to perform various analyses such as:
 - Summarize data with tools that calculate total counts, lengths, areas, and basic descriptive statistics of features and their attributes within areas or near other features
 - Find locations with tools that are used to identify areas that meet a number of different criteria which can be based upon attribute queries and spatial queries. The resulting areas can be selected from existing features or can be created as a new feature where all the requirements are met.

⁴ <http://doc.arcgis.com/en/arcgis-online/share-maps/supported-items.htm>

- Data enrichment with tools that help you explore the character of areas. Detailed demographic data and statistics are returned for your chosen areas.
- Pattern analysis with tools that help you identify, quantify, and visualize spatial patterns in your data.
- Use proximity with tools that help you answer one of the most common questions posed in spatial analysis: "What is near what?"
- Manage data with tools that are used for both the day-to-day management of geographic data and for combining data prior to analysis.

- The *Save* button ( Save) allows you to save a new map or save a copy of an old one. You can save your map to any folder in the *My Content* tab of the Content section.
- The *Share* button ( Share) allows you to share a saved map. You can share the map to everyone, your organization, and/or groups. You can copy the link for sharing on websites such as social media pages or embed it in a website. You can also create a web app.
- The *Print* button ( Print) allows you to create a printer-friendly image of your map. Layers that are not accessible externally, KML, and time-aware layers do not appear on a printed map. If you print a map using your browser print button, other layers and logos may be missing as well. Clicking the *Print* button opens a new browser tab showing a print preview of your map.
- The *Directions* button ( Directions) allows you to get directions to two or more destinations. You can also get the driving distance and time, rural driving distance and time, trucking distance and time, and walking distance and time.
- The *Measure* button ( Measure) allows you to find the area of a polygon, the length of a line, or the coordinates of a point. You can choose either metric or imperial units for the area and length. You can choose degrees or degrees/minutes/seconds for the coordinates.
- The *Bookmarks* button ( Bookmarks) allows you to create a bookmark based on the current location and scale of the map. When you click on a bookmark, the map zooms to that particular location.
- The *Search* box () lets you find locations on a map, such as addresses, places, and points of interests. The map zooms in to the resulting location with a pop-up window pointing to it. The pop-up window shows other possible search results and allows you to get direction to the location and add map notes.

4.4 Scene

The Scene page features the scene viewer which is an app built into the ArcGIS Online website for creating and interacting with 3D scenes (Figure 8). A scene, which is a symbolized 3D geospatial content, can be made using the scene viewer or ArcGIS Pro.

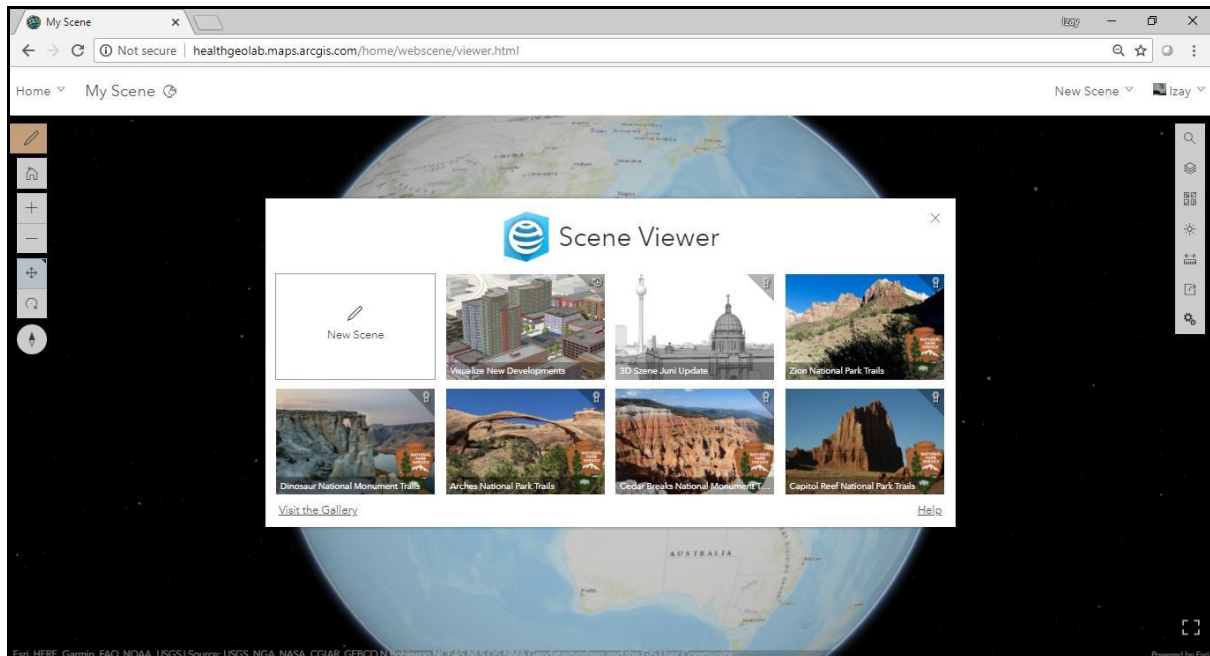


Figure 8 - Scene Viewer page

A scene includes a collection of 2D and 3D layers, multi-scale basemap, styles, and configurations. It presents a new way of visualizing and analyzing geographic information in an intuitive and interactive 3D environment. Depending on the scale of the data you want to visualize, you can choose to use a global or local scene.

4.5 Groups

The Groups section shows you the ArcGIS Online groups you are a member or owner of (Figure 9). A group is a collection of maps or apps usually pertaining to a certain subject or area of interest and used as a way organizing your contents.

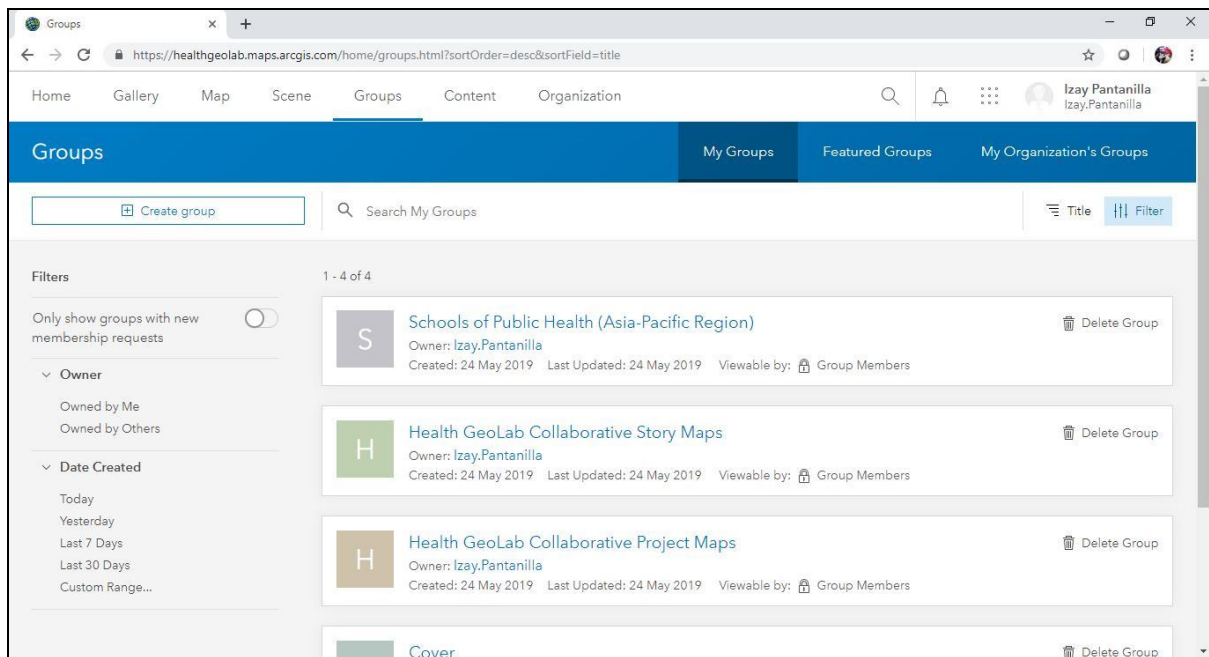


Figure 9 - Group page of one of HGLC AGOL Organization member

In the *My Groups* tab, you can see the groups you created or a member of, create your own group, or join others. By creating your own group, you have control over the content shared to the group, who can find the group, if others can request to join, and who can contribute content. By joining a group, you have access to content and given the chance to collaborate with people of your particular interest.

In the *Featured Groups* tab, a list of featured groups can be accessed, and their content used, to improve your maps. Some default featured groups are Esri Maps and Data, Web Application Templates, and ArcGIS for Local Government. The administrator of your organization's AGOL account may choose to add or remove featured groups in the account's settings.

In the *My Organization's Group*, you can also find/search for HGLC (or your organization's) groups. You can search for the groups based on the date they were modified, the date they were created, or by whom they are viewable. You may also create new groups in this tab.

4.6 Content

The Content page shows the maps, apps, or files you, your organization, or your group/s have added to or created on ArcGIS Online.

The *My Content* tab shows your personal content. You can use this section to organize, access, and work with your content (Figure 10). You can add or create new items, create or delete different folders to arrange your files, or use the filters to show only the content you are interested in. You can access the one-click menu which, depending on the item type, will give you the option to view item details; open your item in Map Viewer, Scene Viewer, or

ArcGIS Desktop; create Presentation; add item to new map; or add item to new map with full editing control.

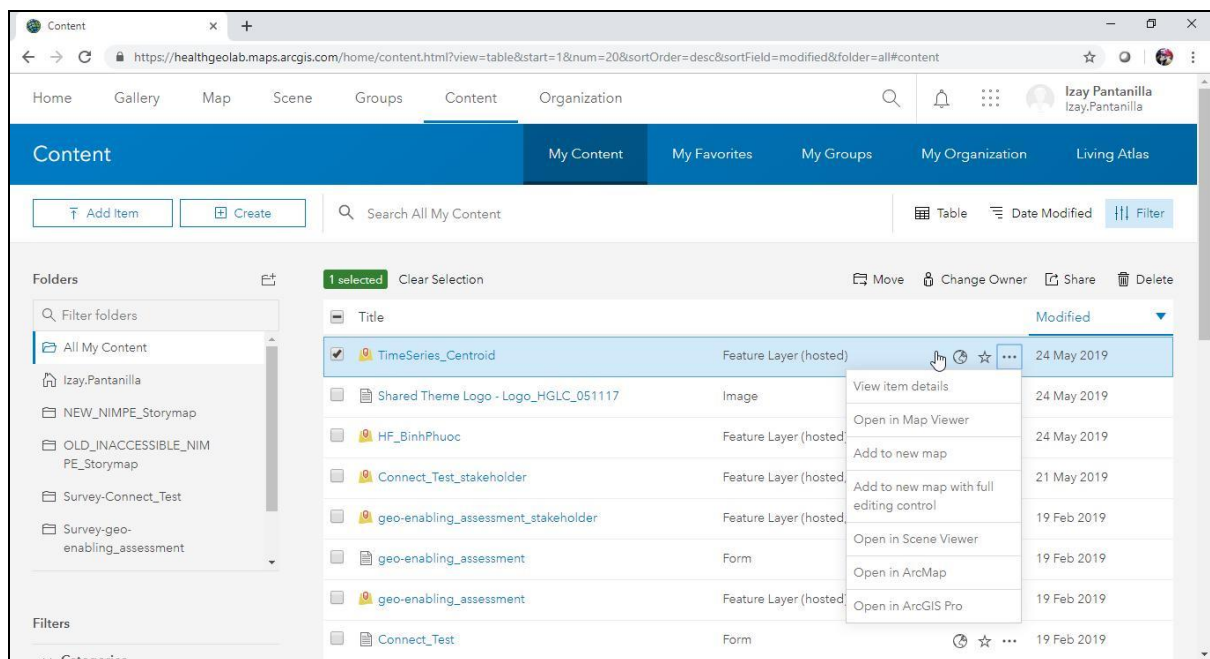


Figure 10 – Example of My Content tab

This page allows you to do the following:

- **Add Item** () from your computer or the web or add an application. The types of supported file you can upload from your computer or from the Web can be seen on the ArcGIS Online help page⁵.
- **Create** () your content such as feature layers, tile layers, apps, maps, or scenes.
- **Move** () your content to another one of your folders.
- **Change the owner** () of your content to another member of your organization and move it to one of the folders in their contents page.
- **Share** () your contents to everyone, your organization, and/or to group/s.
- **Delete** () your contents.

The *Move*, *Change Owner*, *Share*, and *Delete* buttons will only show up if you have selected a content in the list by ticking the checkbox beside the content title.

The *My Favorites* tab is for the contents you have added as your favorites. Favorites can be defined from any item details page or by clicking on the star icon near or beside an item as it is listed in any of the Content tabs. Once this is done, the content will automatically show up on your *My Favorites* tab.

⁵ <http://doc.arcgis.com/en/arcgis-online/share-maps/supported-items.htm>

The *My Groups* tab shows the items in the groups you created or are a member of. The *My Organization* tab shows the items contributed by you and other members of your organization. The *Living Atlas* tab shows the different maps curated by Esri and made available to the public.

4.6.1 Types of Content

Items can be added to ArcGIS Online through *Content > My Content > Add Item* or by creating and saving items through ArcGIS Online workflows such as creating a map in Map Viewer. A full list of item types can be seen on the ArcGIS Online help page⁶.

The most common items fall into three categories:

- **Layers** - In ArcGIS Online, you work with geographic data through layers. Layers, also called web layers, are logical collections of geographic data that are used to create maps and scenes; they are also the basis for geographic analysis. More information about layers can be seen on the ArcGIS Online help page⁷.
- **Maps** - An ArcGIS web map is an interactive display of geographic information that you can use to tell stories and answer questions. Maps contain a basemap, a set of data layers (many of which include interactive pop-up windows with information about the data), an extent, and navigation tools to pan and zoom. More information about maps can be seen on the ArcGIS Online help page⁸.
- **Apps** – Apps serve as a wrapper around one or more maps adding functionality to the maps. Different apps offer various functionality, such as layouts and color schemes, editing and identify tools, social media feeds, side-by-side map viewers, and so on. More information about apps can be seen on the ArcGIS Online help page⁹.

Key types of applications are as follows:

- **Configurable Apps** – By leveraging a configurable app and choosing a few options, you offer your users a focused experience for interacting with your map. One of the most popular types of configurable apps is Story Maps which combine authoritative maps with narrative text, images, and multimedia content. More information about configurable apps can be seen on the ArcGIS Online help page¹⁰.

⁶ <https://doc.arcgis.com/en/arcgis-online/reference/supported-items.htm>



⁷ <https://doc.arcgis.com/en/arcgis-online/reference/layers.htm>

⁸ <https://doc.arcgis.com/en/arcgis-online/reference/what-is-web-map.htm>

⁹ <https://doc.arcgis.com/en/arcgis-online/get-started/get-started-with-apps.htm>


¹⁰ <https://doc.arcgis.com/en/arcgis-online/create-maps/choose-configurable-app.htm>

- **Web AppBuilder** – Web AppBuilder for ArcGIS is an intuitive what-you-see-is-what-you-get (WYSIWYG) application that allows you to build 2D and 3D web apps without writing a single line of code. More information about configurable apps can be seen on the ArcGIS Online help page¹¹.
- **Operations Dashboard** – Operations dashboard allows you to use charts, gauges, maps, and other visual elements to reflect the status and performance of people, services, assets, and events in real time. More information about configurable apps can be seen on the ArcGIS Online help page¹².

These applications can be created on the *Map* or *Content* page. On the *Map* page, create a map or open an existing one, click *Share* , and then click *Create A Web App*. On the *Content* page, click *Create*  then choose the type of app you would like to create.

4.6.2 Organizing Content

When searching content, it can be filtered a number of ways including by category, item type, date modified, date created, tags, how it is shared, and status.

Content categories are determined by the administrator but anyone who can create items can assign their items to a category by going to *Content*, selecting the item then clicking  *Categorize*. Items can be assigned to more than one category.

The status of an item can be Authoritative, Deprecated, or none (Figure 11). Any user can mark their items as Deprecated by going to the *Settings* tab of the *Item Details* page and clicking *Mark as Deprecated*. This will discourage use of the item. Only administrators can mark items as Authoritative, if an item is marked as authoritative it should be used over other similar layers in the organization.

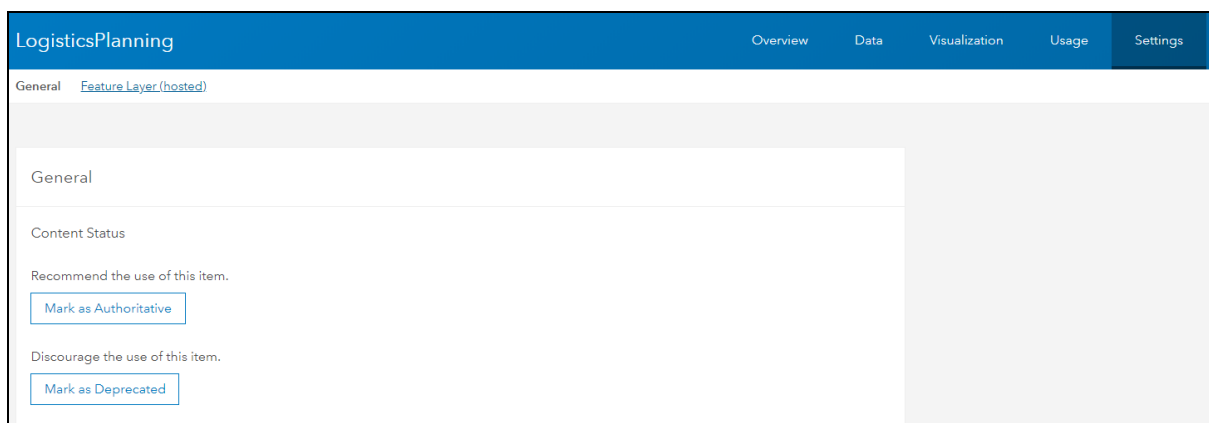


Figure 11 – Example of Content Status Settings

¹¹ <https://doc.arcgis.com/en/web-appbuilder/create-apps/what-is-web-appbuilder.htm>

¹² <https://doc.arcgis.com/en/operations-dashboard/help/what-is-a-dashboard.htm>

4.7 Organization

The Organization section allows you to manage your organization's AGOL account if you are a designated account administrator. The Overview tab of the Organization page shows the different items you can manage which links to the other tabs: Members, Licenses, Status, and Settings (Figure 12).

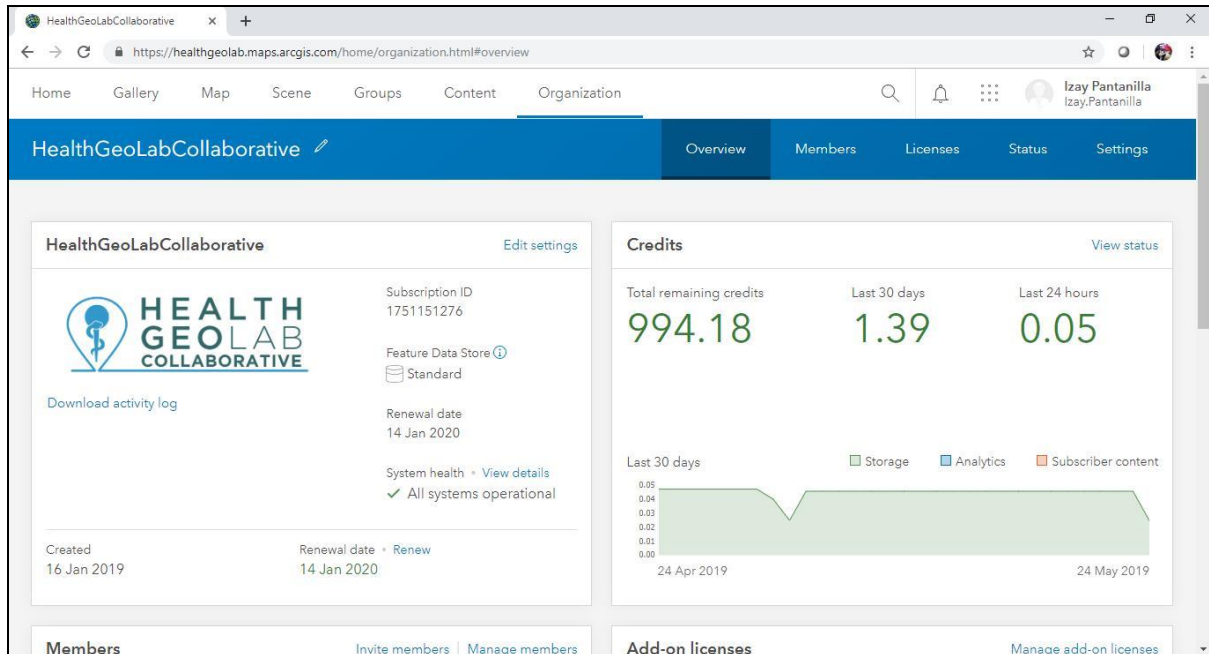


Figure 12 - Organization page when accessed as an administrator

In contrast, if you have any other role, like publisher, user, or viewer, the Organization page will show you the Overview tab with links only for viewing your organization's members, administration contact, and Open Data groups (Figure 13).

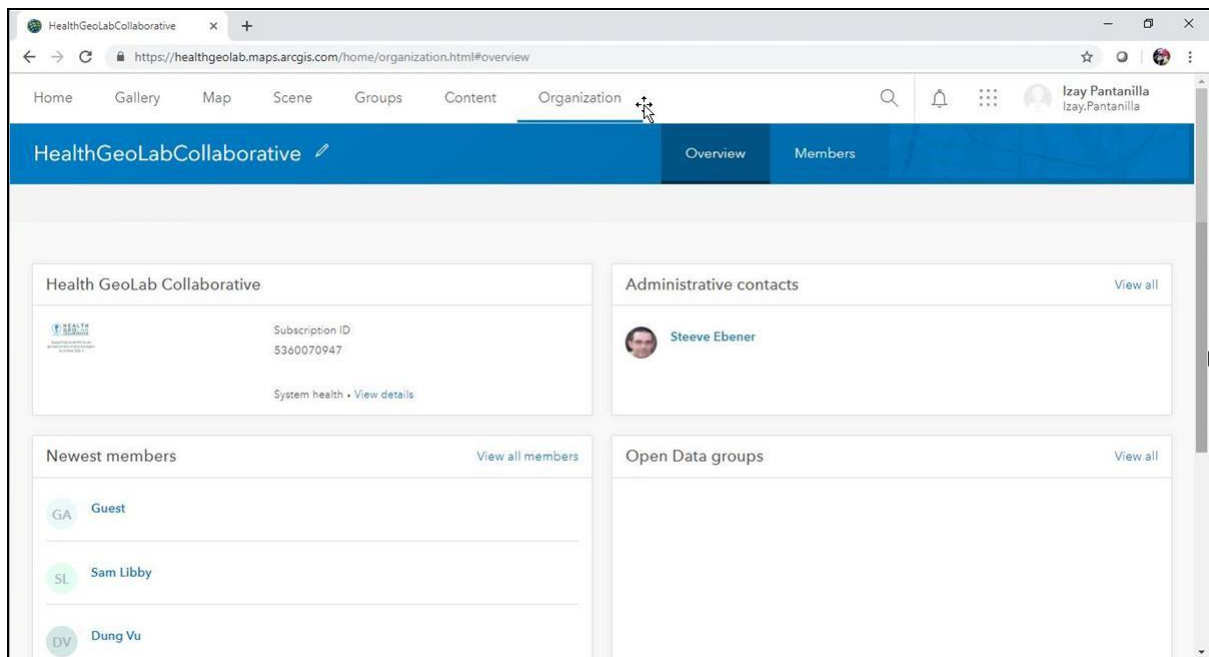


Figure 13 – Overview tab of Organization page when accessed as a viewer, user, or publisher

When accessing the Members tab, you can view the items, groups, and profile of the other members of your organization (Figure 14).

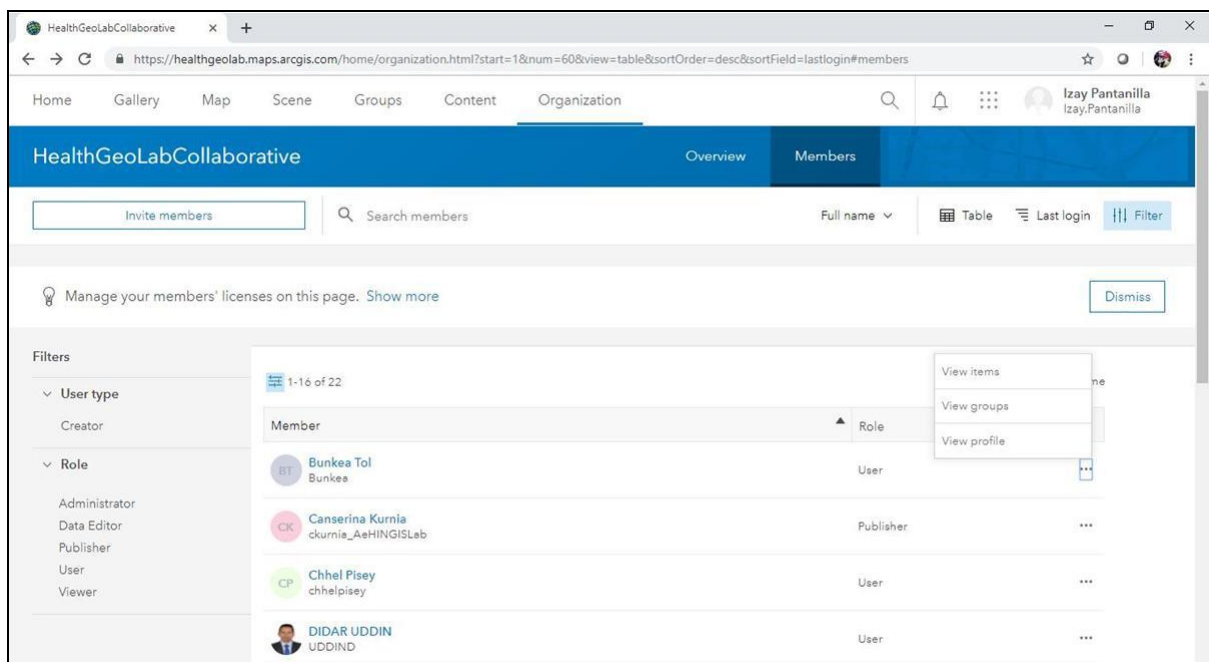


Figure 14 – Members tab of Organization page when accessed as a viewer, user, or publisher

The following section describes in detail what you can do from the Members tab when you are logged in with administrator privileges.

As an administrator, you can do the following to your organization's account:

- In the Members tab, you can invite or add members to the organization. You can manage roles, add-on licenses, user type, and contents; modify profiles; reset passwords; enable and disable Esri Access; and disable and delete accounts of members (Figure 15).

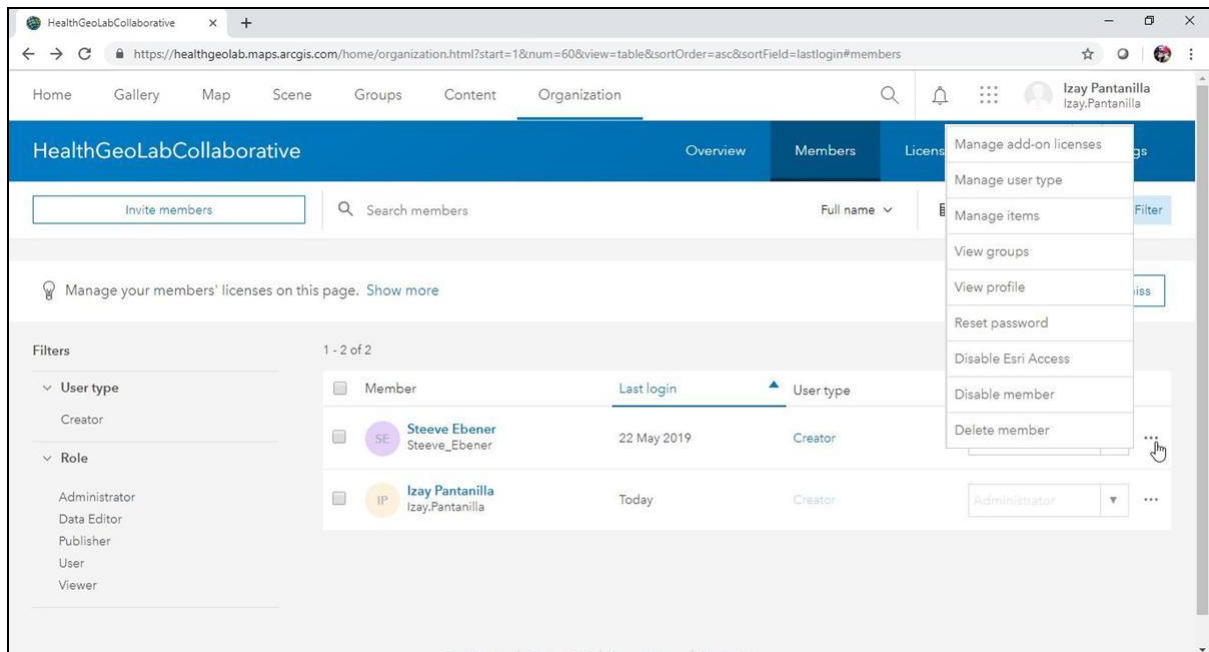


Figure 15 – Members tab of Organization page when accessed as an administrator

- In the Licenses tab, you can manage the licenses for ArcGIS Pro and other Esri products. You can specify which members have licenses for each app (Figure 16).

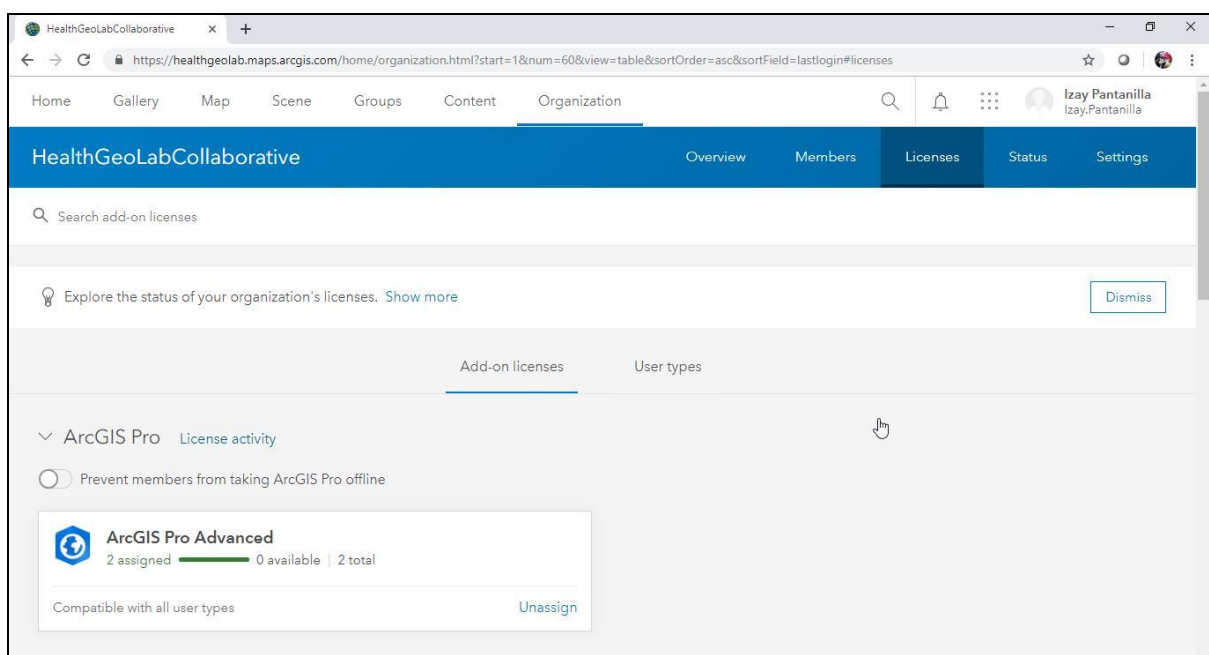


Figure 16 – Licenses tab of Organization page when accessed as an administrator

- In the Status tab, you can view the status of the organization's account which gives detailed summaries on the credits, contents, apps, members, and groups (Figure 17).

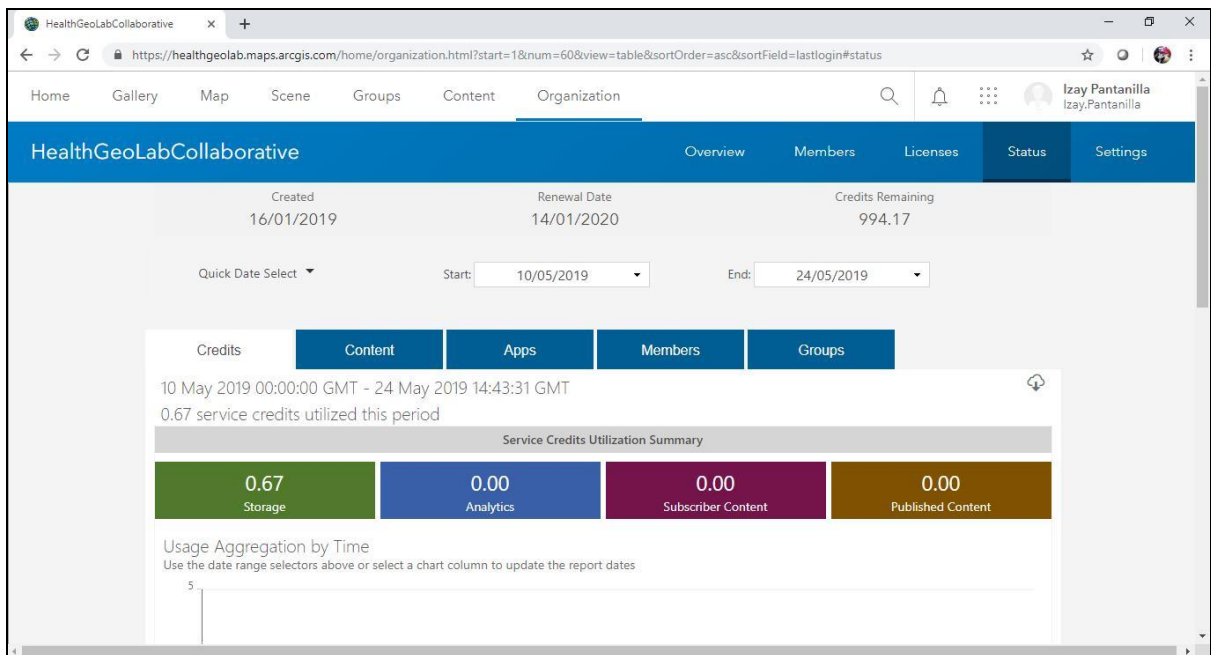


Figure 17 – Status tab of Organization page when accessed as an administrator

- In the Settings tab, you can edit the settings of your organization platform such as modify the content and look of the homepage and gallery; configure the components of maps, items, groups, utility services, and security; create, edit, and manage member roles; designate contact and purchasers for ArcGIS Marketplace; manage credit budgeting and allocation; configure the security settings; and enable/disable Open Data (Figure 18).

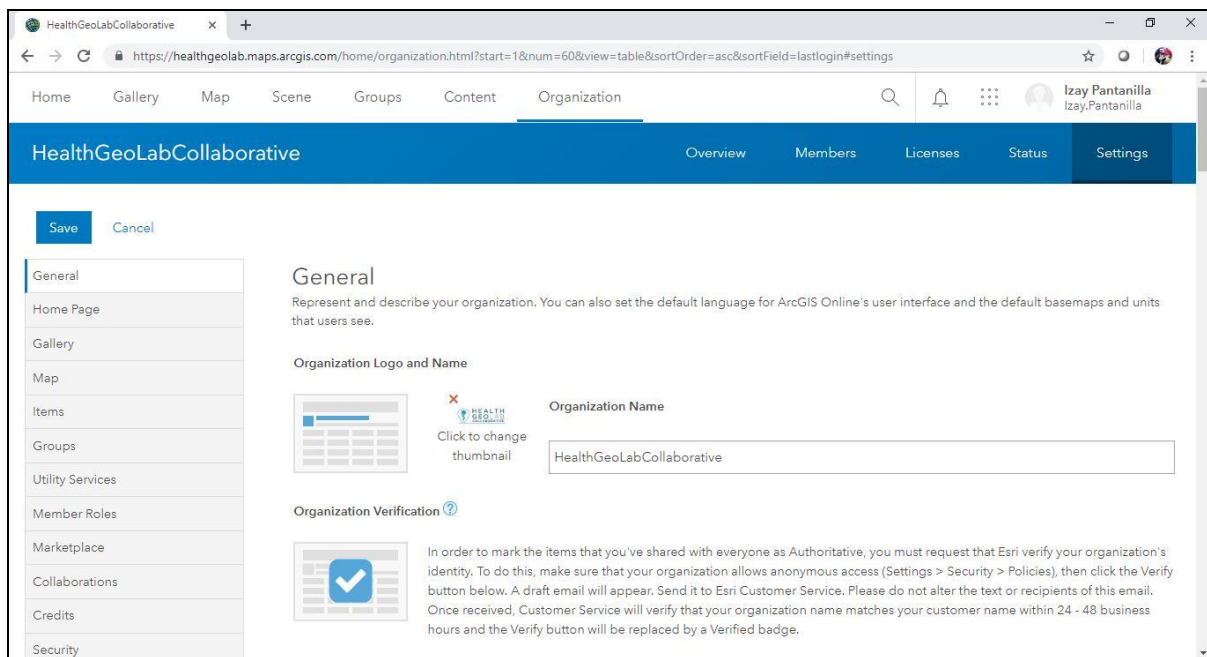
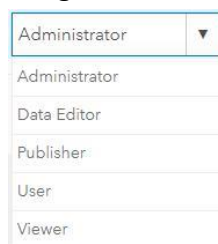



Figure 18 – Settings tab of Organization page when accessed as an administrator

You can also do the following to each member's account:



- by clicking the dropdown menu in the "Role" column:
 - Change their roles to administrator, publisher, user, or a custom role that you would have predefined in the Settings tab;



- after clicking on the Menu button located on the last column of each record in the table ():
 - Manage the items in their Content page such as adding and/or deleting folders and sharing, deleting, or changing the owner of the items;
 - View the groups they are the owner or member of;
 - View and edit their profiles;
 - Reset their log in passwords;
 - Enable/disable their Esri access which gives them access to My Esri, GeoNet, and manage email communications from Esri;
 - Disable members which would prevent them from accessing their AGOL account, consuming organizational resources, create content, or administer the site. Disabled members are still counted toward the organization's users; and

- Delete members which would remove them from the organization's member list. Deleted members no longer have access to the contents or groups they previously owned. You have to transfer the ownership of contents and groups of the member before deleting the member.

4.8 Notifications and App Switcher

There are two additional icons at the top of the Menu on most pages: Notifications () and the App Launcher ().

A number will appear over the notifications icon whenever you request to join a group, when your request has been accepted or declined, and when you have been invited to join a group.

The App Launcher lets you see the apps and related Esri sites made available to you. You can change the order of apps and sites in the app launcher by dragging and dropping the icons to different locations inside the app launcher window. If you have access to more apps and sites than you need to use frequently, click Show More at the bottom of the window and drag some apps and sites to the secondary area.

5. ArcGIS Online Service Credits

Service credits are the currency used across ArcGIS and are required for specific functionalities, transactions, storage, and using premium content. Most of things you do with ArcGIS Online do not require you to use service credits but some do. You will receive a set amount of service credits with your ArcGIS Online subscription and you have the option to add more if needed.

The ArcGIS Online services that require service credits are storage, analytics, demographics, and lifestyle maps. The number of service credits you need depends on the services you plan to use. You can learn more about service credits on ArcGIS Service Credits page¹³.

6. Additional ArcGIS Online related resources

There are several ways for you to get started with ArcGIS Online or improve on what you already know. The sections below provide a first set of free and paying resources you can use in this regard.

¹³ <http://www.arcgis.com/features/plans/credits.html>

6.1 Additional free resources

Here are some of the free resources you can use to learn about ArcGIS Online or improve your knowledge and skills about it:

- The GIS encyclopaedia wiki¹⁴ is the most comprehensive and collaborative dictionary source of information and reference on GIS.
- Esri's GIS dictionary¹⁵ is the most comprehensive glossary of GIS terms you can find online and therefore a great resource to learn the language
- The Learn ArcGIS page on Esri's web site¹⁶ is a great starting point to get familiar with the software with its overview and lessons. Two specific pages to look at from this resource:
 - The Get Started with ArcGIS Online page¹⁷
 - The Lessons Gallery page¹⁸
- The ArcGIS Online page on the Esri's web site¹⁹
- The ArcGIS Online Help page²⁰
- Esri's online training catalogue also gives access to 25 free ArcGIS Online training seminars or web courses²¹. Among those we can mention are:
 - Getting started with GIS
 - Maps and More: Discover the Living Atlas of the World
 - Creating Hosted Map Services with ArcGIS Online
 - Gain Geographic Insight with ArcGIS Online Analysis Tools
- The ArcGIS Book²² where you can find 10 big ideas about applying geography to your world

In addition to the above, you can use the Health GeoLab Collaborative LinkedIn group²³ to access knowledge and expertise in the Region.

6.2 Additional paying resources

Esri's training resource page²⁴ offers a large variety of paying on site or online training courses to improve your skills on specific ArcGIS Online functionalities. The course

¹⁴ http://wiki.gis.com/wiki/index.php/New_to_GIS#Related_links

¹⁵ <http://support.esri.com/other-resources/gis-dictionary>

¹⁶ <http://learn.arcgis.com/en/>

¹⁷ <http://learn.arcgis.com/en/projects/get-started-with-arcgis-online/>

¹⁸ <http://learn.arcgis.com/en/gallery/>

¹⁹ <http://www.esri.com/software/arcgis/arcgisonline>

²⁰ <http://doc.arcgis.com/en/arcgis-online/>

²¹

<http://training.esri.com/gateway/index.cfm?fa=search.results&searchterm=agolcontent&search=Search&orderBy=Price%20asc>

²² <http://learn.arcgis.com/en/arcgis-book/>

²³ <https://www.linkedin.com/groups/10311235>

²⁴ <http://www.esri.com/training/main>

recommendation page²⁵ will help you choose what is the most appropriate based on your current level of expertise and needs.

Esri Press also publishes resource materials for ArcGIS Online such as the *Getting to Know Web GIS* workbook²⁶ that offers step-by-step exercises on the different functionalities of ArcGIS Online.

6.3 Public Authoritative Content

After learning how to navigate and use the different features of ArcGIS Online, one of things most people have a hard time finding is authoritative and reliable content to use in their maps and apps.

There is a large number of publicly shared content in ArcGIS Online through the Living Atlas tab in the Content section. However, Esri is making it easier to identify and find the best possible content from the organization responsible for publishing that content, which you can trust to be well maintained over time. These organizations can now publish their best possible content and mark them as “Authoritative” and it will appear as authoritative from that organization. Users that are looking for this type of content can now filter their search results to just show content that is authoritative.

To learn more about Authoritative Content including how to share and them, read more about it from this [blog](#)²⁷.

²⁵ <http://www.esri.com/training/main/training-catalog/course-recommendations>

²⁶ <http://esripress.esri.com/display/index.cfm?fuseaction=display&websiteID=283&moduleID=0>

²⁷ <https://www.esri.com/arcgis-blog/products/arcgis-online/announcements/whats-new-public-authoritative-content/>