**GLOBAL FOREST WATCH**

**Map**Builder

# Free Public Account Tutorial

### Create a GFW MapBuilder Application Using a Public ArcGIS Online Account

Photo: World Resources Institute

# GLOBAL FOREST WATCH

# MapBuilder
## Table of Contents

Photo: World Resources Institute

# GLOBAL FOREST WATCH

# MapBuilder

**Note:** Users with access to organization ArcGIS Online accounts can create GFW MapBuilder applications by registering the GFW MapBuilder template with their organization. If you have questions about this process, please contact **gfw-mapbuilder@wri.org**.

## Step 1: Create a public ArcGIS Online account and log in.

1. Navigate to ArcGIS Online (**www.arcgis.com**) and click "Sign In" on the upper right corner. If you already have a public account, you can log in with your existing credentials. Otherwise, you can create a free account using the options described below.

   a. There are three login options for new users: (1) Facebook, (2) Google or (3) click on "Create a public account". If you use Facebook or Google, you will be prompted to pick a username and your password will be the same as your Facebook or Google account. If you create an account by manually entering information, you will be prompted to pick a username, password and security question.

## Step 2: Register services with your account.

If you have an ArcGIS Server, GeoServer or MapServer, you can choose to register your services with your public ArcGIS Online account. Registering your services will add them as items in your ArcGIS Online. If your services contain multiple layers, it is recommended that you register each service as a separate layer.

**Note:** If you do not have a GIS server, skip this step and proceed to Step 3.

To register your services:

1. Click "Content" then click "Add Item" and select "from the web".
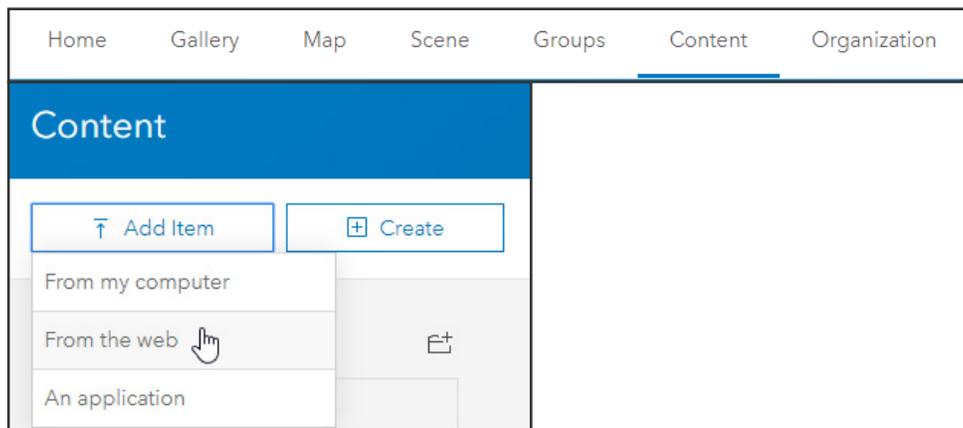
2.  Select the type of service you would like to register and copy the URL. If the service contains multiple layers, you will need to select which layers to register. For WMS services, register each layer separately. You must also provide a layer name and any applicable tags. The screenshots below show how to register a WMS service and an ArcGIS Web Service:
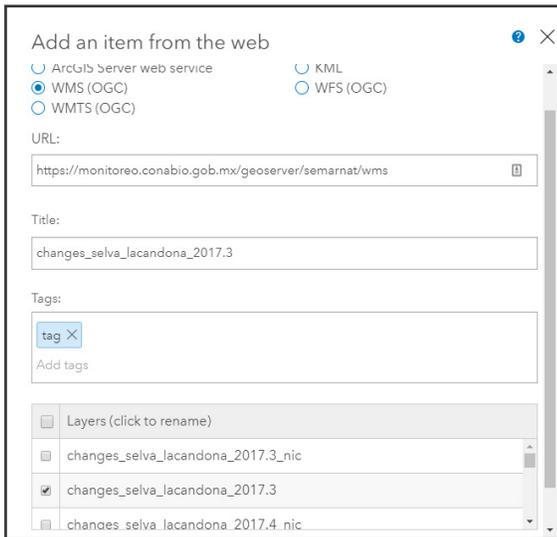


*Figure 1: Register a Web Map Service (WMS)*
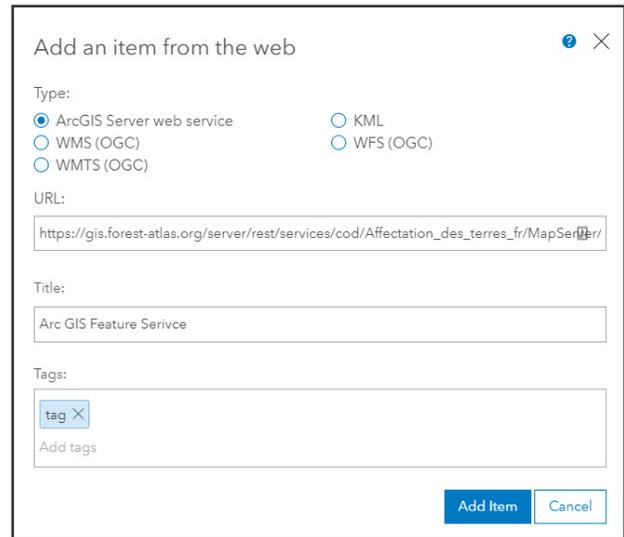


*Figure 2: Register an ArcGIS Web Service*

3.  Once you register your services, you can edit their settings. For each layer, it is recommended that you add a summary, description and credits. The description and citation will be used in GFW MapBuilder and will show up as the layer's metadata.

4.  You will need to share your items publicly if you want to use the layers in a public Mapbuilder application. To do so, click "Share" and ensure that "Everyone (public)" is checked.
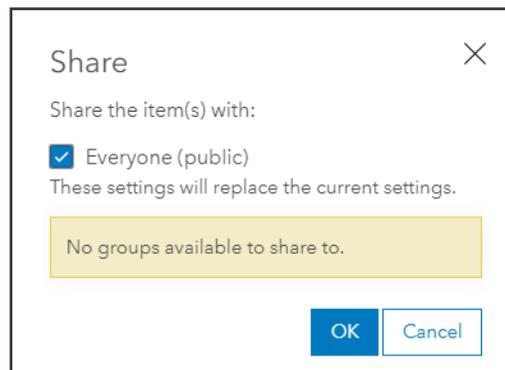


## Step 3: Create a web map.

Before creating a GFW MapBuilder application, you must first create a web map in ArcGIS Online. The steps below provide an introduction to editing an ArcGIS Online web map. Please consult **ESRI documentation** for additional information on how to edit and modify your web map.

1. Click "My Content" then click "+ Create" and select "Map".
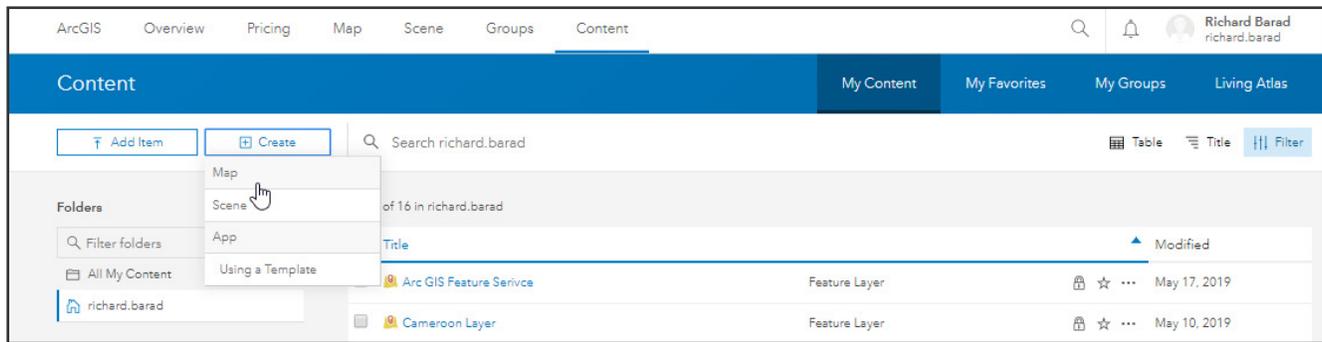


2. Give your web map a name, any applicable tags and a summary. Click "OK".

3. You are now ready to add data to the web map. With a free account, the options for adding data include:

   a. Add a layer from a file (e.g., shapefile).
   b. Add a layer from ArcGIS Online.
   c. Add a layer from your ArcGIS Online (if you registered layers in Step 2).

4. To add a layer from a file:

   a. Click "Add" in the upper left corner then select "Add Layer from File".
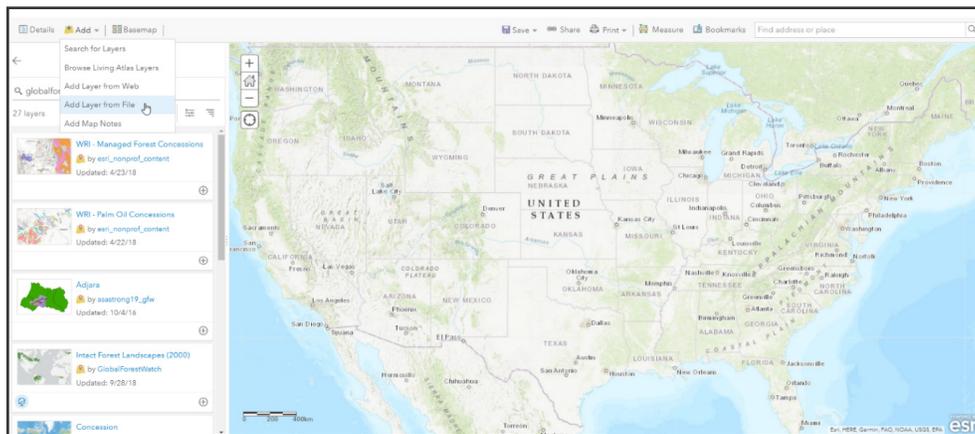


   b. Click "Choose File" and attach your selected file. Once attached, click "Import Layer" to upload the file.
      **Note:** When uploading a shapefile, all shapefile components must be zipped into a single folder. You can also upload CSVs, GPX or GeoJSON files.

   c. You can now choose between different options for visualizing your data. Choose "Location" to show all your features in the same color or choose "Types" to visualize the shapes based on attributes. If you choose "Types", you will also need to select an attribute to show. Click "Done" once you are done editing the layer.

**Change Style**

Aires protégées

**1** Choose an attribute to show

cat_uicn

➕ Add attribute

> If you are using the "Types" draw style, you can use this drop-down to change which attribute is shown.

**2** Select a drawing style

Types (Unique symbols) ✓

OPTIONS

> Use the "Types" draw style to visualize shapes based on attribute.

> Click "Options" for advanced color editing options.

Location (Single symbol)

SELECT

> Use the "Location" draw style to visualize all shapes in the same color.

DONE   CANCEL

> Click "Done" once you are finished editing your layer visualization.

5. You may also choose to customize the fields shown on your web map pop-ups. The pop-ups indicate the fields which will be visible to the user when they click on a shape in your map.

   a. To customize the pop-ups, click on "More Options" then "Configure Pop-up".

☑ Aires protégées

☑ Mining concessi

🌐 Topographic

- 🔍 Zoom to
- 📊 Transparency
- 📈 Set Visibility Range
- 📄 Rename
- ⬆ Move up
- ⬇ Move down
- 📋 Copy
- 📑 Hide in Legend
- ❌ Remove
- 📄 Remove Pop-up
- 📊 Configure Pop-up
- 📄 Create Labels
- 📄 Description
- 💾 Save Layer

b. Click "Configured Attributes" to customize the attributes shown in your pop-up.

iso3 {iso3}
province {province}
cat_uicn {cat_uicn}
statu_leg {statu_leg}

Configure Attributes
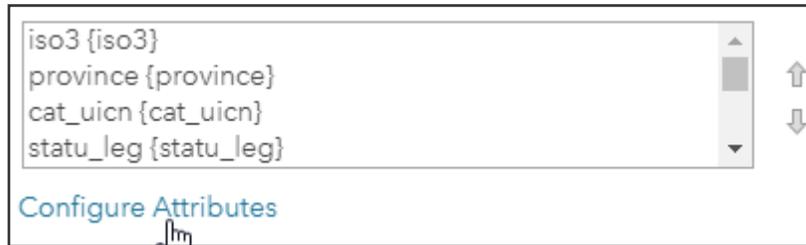
c. Uncheck the display field to turn off fields that you do not want to show in your pop-up. You may also adjust the field alias to change the name of the field that your GFW MapBuilder users will see.

Configure Attributes

Check the fields you want to display and edit. Select a field to change its alias, order it, and format it.

| Display | Edit | Field Name | Field Alias |
|---|---|---|---|
| ☐ | ☑ | {paren_iso3} | paren_iso3 |
| ☐ | ☑ | {desig_type} | desig_type |
| ☐ | ☑ | {desig_eng} | desig_eng |
| ☑ | ☑ | {cat_uicn} | IUCN Category |
| ☑ | ☑ | {statu_leg} | statu_leg |
| ☑ | ☑ | {date_desig} | date_desig |
| ☑ | ☑ | {province} | province |

Editing
TextBox Type
Single Line

Hint

OK    CANCEL

Use the arrows to select a field and adjust the order of your fields in your pop-ups.

Uncheck this display field for a layer to turn it off in your pop-up.

Change the Field Alias to modify how the field name will be displayed to your GFW MapBuilder users.

d. Once you are done configuring your pop-ups, click "OK".

6. To add a layer from ArcGIS Online:

a. Click "Add" then select "Search for Layers".

**Note:** If you registered services in Step 2, they will be listed under "My Content" and you can add them to your web map.

Details    Add ▾    |    Basemap    |

About

Contents

▸ Topog

Search for Layers

Browse Living Atlas Layers

Add Layer from Web

Add Layer from File

Add Map Notes
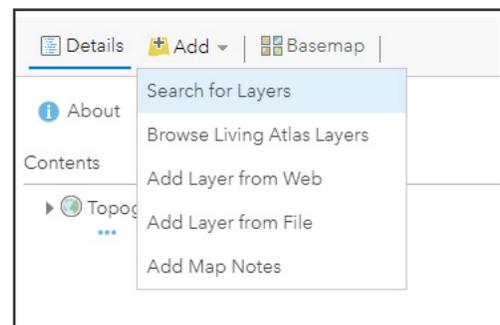
b. Change "My Content" to "ArcGIS Online" to search for public datasets.
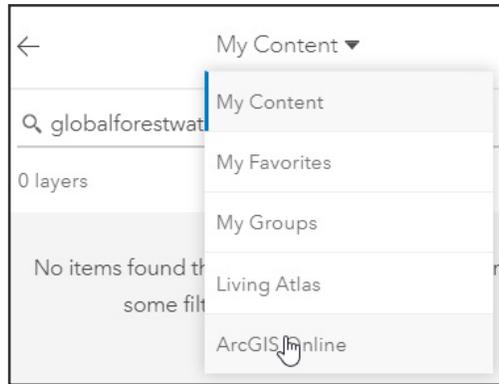


c. You can search for layers published by specific users. For example, type "globalforestwatch" to search for layers published by Global Forest Watch. Datasets marked as being shared by the user named **GlobalForestWatch** are official Global Forest Watch datasets.

d. To add a layer to the web map, click the "+" button on the bottom corner.



e. Click on the back button to return to your layer menu.

7. When you are done working on your web map, click "Save".
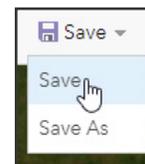


8. Click on the ArcGIS drop-down button on the upper left corner then select "Content" to return to your list of content. Your web map will now be visible in your content list.
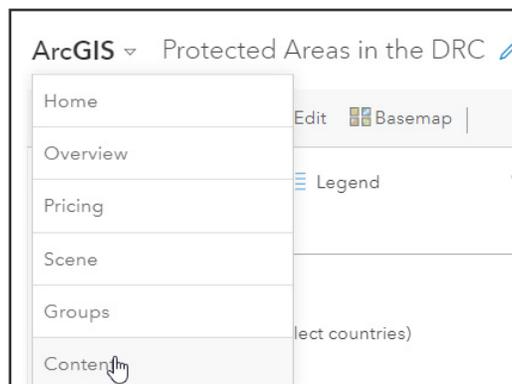


9. The web map must be shared publicly to allow other people to view it. To share the map, click the lock button next to the item and ensure "Everyone (public)" is checked.

## Step 4: Create a GFW MapBuilder configurable web application.

1. Click "Add Item" then select "An application".
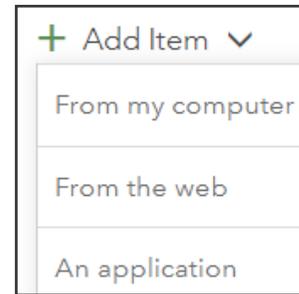
2. Use the settings listed below:
   a. Under the "Purpose" drop-down, select "Configurable".
   b. Under the "API" drop-down, select "JavaScript".
   c. Type the following URL into the URL field: **http://my.gfw-mapbuilder.org/v1.latest/**.
   d. Give your application a name and any applicable tags.

3. Click "Add Item" and you will be automatically redirected to your application item page.

4. Click on the "Settings" tab of your application. To prevent your application from being deleted, check "Prevent this item from being accidentally deleted".

5. Scroll down to the configuration parameters section. This is where you will paste the code to customize your application.

6. The code to customize your application is available on the **GFW MapBuilder GitHub**. Copy this code into the configuration parameters section. To edit the application settings, you will edit this code. Some of the settings you can edit are outlined in the screenshots below. A complete list of editable features is available in **the Annex** at the end of this tutorial.

7. The first setting is the web map. Every item created in ArcGIS Online - including web maps, applications and layers - is assigned a unique ID. You will need to add the ID for your web map created in Step 2. To get the web map ID, right click on the "Content" button and open the link in a new tab. Click on the web map you created in Step 2.
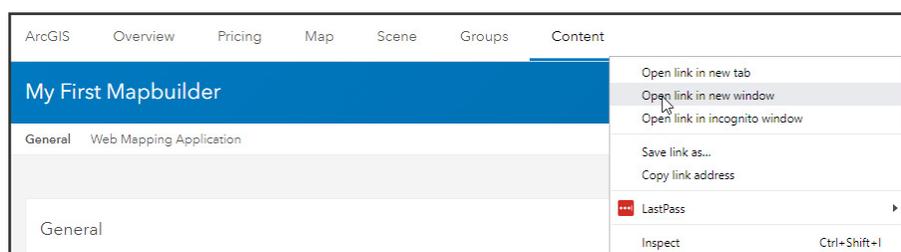
8. Look at the URL of your web map item and find its ID. Copy this ID.

```
https://www.arcgis.com/home/item.html?id=7d77ee59a65f4f0baf7830579b29ae4f
```

9. Return to your GFW MapBuilder application configuration parameters and remove the current webmap ID and paste the ID for your web map in between the quotes as shown below. When editing the configuration, only the text between the quotes should be modified and users should not modify or remove commas, quotes or colons.

```
{
    "configurationSettings": [],
    "values": {
        "webmap": "7d77ee59a65f4f0baf7830579b29ae4f",
        "language": "en"
```

Paste your web map ID here.

10. You can now edit additional settings in your application. The following screenshot and summary below the screenshot provide an overview of the settings you can edit.

```
{
    "configurationSettings": [],
    "values": {
        "webmap": "00e7465d5ffd41ca9bd5b2e3ef521640",
        "language": "en",
        "title": "GFW MapBuilder",
        "subtitle": "Make maps that matter",
        "narrative": "",
        "webmapMenuName": "Land Use",
        "logoUrl": "http://my.gfw-mapbuilder.org/img/gfw-logo.png",
        "logoLinkUrl": "http://developers.globalforestwatch.org/map-builder/",
        "aboutLinkUrl": "",
        "downloadLinkUrl": "",
        "customColorTheme": "#F0AB00",

        "useAlternativeLanguage": false,
        "alternativeLanguage": "fr",
        "alternativeWebmap": "",
        "alternativeLanguageTitle": "",
        "alternativeLanguageSubtitle": "",
        "alternativeNarrative": "",
        "alternativeWebmapMenuName": "",
        "gladAlerts": true,
        "terraIAlerts": true,
        "sadAlerts": true,
        "viirsFires": true,
        "modisFires": true,
        "intactForests": true,
        "aboveGroundBiomass": true,
        "landCover": true,
        "mangroves": false,
        "primaryForests": false,
        "recentImagery": true,

        "iso": "",
        "hideHeader": false,
        "hideFooter": false,
        "includeMyGFWLogin": false,
        "includeDocumentsTab": false,
    "mapThemeIds": "",
    "mapThemes": "",
    "alternativeMapThemes": ""
    }
}
```

a. **Language:** By default, the language is set to English. You can change the language of your application to fr (French), sp (Spanish), pt (Portuguese), zh (Chinese), ka (Georgian) or id (Indonesian).

b. **Title:** By default, the title is "GFW MapBuilder". You can change this title.

c. **Subtitle:** By default, the subtitle is "Make Better Maps". You can change this subtitle.

d. **Narrative:** Write a brief narrative about your web map. This information will be visible in the information window of your application.

e. **webmapMenuName:** Write a menu name for your web map.

f. **Logourl:** This is the URL for the logo which will be included in your application. For example, we could add the WRI logo by pasting this URL: [http://wri-sites.s3.amazonaws.com/for-est-atlas.org/assets.forest-atlas.org/shared/img/logo/wri-logo.png](http://wri-sites.s3.amazonaws.com/for-est-atlas.org/assets.forest-atlas.org/shared/img/logo/wri-logo.png).

g. **logoLinkUrl:** This is the link to the site that the user will be redirected to when they click on the logo. For example, we may want users to be redirected to the WRI site when they click on the logo. Thus, we would enter [https://www.wri.org](https://www.wri.org).

h. If you would like to translate GFW MapBuilder into a second language you may set useAlternativeLanguage to true and add a translation for your webmap, title, subtitle, narrative and webmap menu name.

i. You may also choose to turn the GFW layers off by setting their status to false or turn them on by setting their status to true.

**Note:** GFW MapBuilder includes additional settings which are outlined in **the Annex** at the end of this tutorial. Please reference the Annex of this document to learn about the configuration settings which are not highlighted above.

The screenshot below shows how the settings you modify will show up in your final GFW Mapbuilder Application.
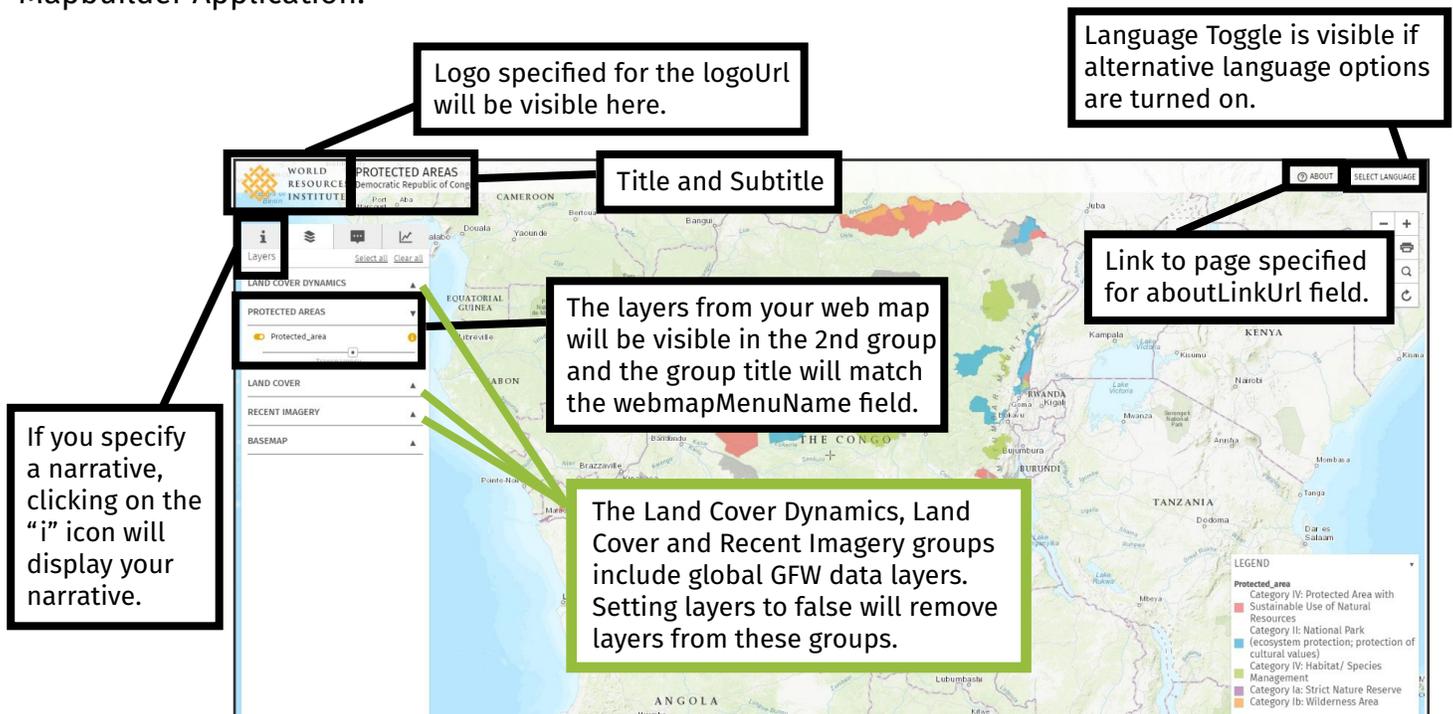
11. Click the save button located under the configuration parameters once you are done editing your application settings.

12. Once you are done configuring your application, the last step is to add the application ID to your application URL.

    a.  Add the following text to your application URL: **?appid=**

    b.  Add the application ID to your URL. The application ID is visible in the URL of your application settings page, as shown below:

    https://www.arcgis.com/home/item.html?id=6d89e4c726fd4095a4adea737053381b#settings

13. Your final URL should look like this:

    Data Source

    URL       http://my.gfw-mapbuilder.org/v1.latest?appid=37707bb4367b4d998f3987

**Note:** Make sure you use the ID for your GFW MapBuilder application and not the ID for your web map.

14. Click the save button located under the configuration parameters once you are done adding the application ID to your URL.

15. Click on the "Overview" tab once you are done editing your application and click "Share" to share your application publicly. If you do not share your application publicly, you will need to enter your ArcGIS Online password to view the application.

16. Click "View Application" to view your custom GFW MapBuilder application.

## Step 5: Share your GFW MapBuilder application.

Users may choose from several different approaches to share their GFW MapBuilder application.

1.  **Share your URL:** If your GFW MapBuilder application is shared publicly, you may copy the URL and share it with partners, colleagues, and peers.

2.  **Share over social media:** The GFW MapBuilder template includes built in tools for social media sharing. To share the app over social media, click the share button and share the app over Facebook or Twitter.

3.  **Embed GFW MapBuilder into your website:** Users may embed their GFW MapBuilder into their own website using an iframe. The example below shows how a GFW MapBuilder application can be embedded into a website. Change the src URL highlighted in yellow to match the URL for your MapBuilder Application.

<iframe width="100%" height="800" src="https://my.gfw-mapbuilder.org/v1.latest/index.html?appid=2266d37729a14d91865d7b76122d4c72"></iframe>

## General Settings

The general settings allow users to customize items such as the application text, logos, hyperlinks and web map.

| Property | Explanation | Data type | Example |
|---|---|---|---|
| Web map | ID from ArcGIS Online for webmap to use in the MapBuilder application | string | "webmap": "de85e3fcc07948238aa6c1afd2a4ceb0", |
| Language | Identifies the language for the application | string | "language": "en", |
| Title | Title for the MapBuilder application | string | "title": "GFW MapBuilder", |
| Subtitle | Subtitle for MapBuilder application | string | "subtitle": "Make maps that matter", |
| Narrative | Text for the narrative which will be visible in the information tab of the application. Users can use html tags to edit and customize the formatting of this text | string | "narrative": "This mapbuilder provides an overview of Land Use in the DRC", |
| webmapMenuName | Heading in menu for user-defined group of layers that are pulled from the web map | string | "webmapMenuName": "Land Use", |
| logoUrl | URL for an image of your organization logo | string | "logoUrl": "http://my.gfw-mapbuilder.org/img/gfw-logo.png", |
| logolinkUrl | URL for the website your application will link to when users click on your organization logo | string | "logoLinkUrl": "http://developers.globalforestwatch.org/map-builder/", |
| aboutLinkUrl (optional) | Will add an "about" menu item in the header. The link will point to the given URL | string | "aboutLinkUrl": "http://wri.org", |
| downloadLinkUrl (optional) | Will add a "download" menu item in the header. Link will point to the given URL. This is useful for adding links to open data portals | string | "downloadLinkUrl": "http://wri.org", |
| customColorTheme | Choose a color theme for your MapBuilder application | string | "customColorTheme":"#F0AB00", |

## Alternative Language Settings

Alternative language settings allow users to specify a secondary/alternative language for your application. You can also provide a translated map, title, subtitle, narrative and web map menu name. These settings are only needed if you want to translate your application.

The languages currently supported by GFW MapBuilder are:

- English (en)
- French (fr)
- Spanish (es)
- Portuguese (pt)
- Indonesian (id)
- Chinese (zh)
- Georgian (ka)

| Property | Explanation | Data type | Example |
|---|---|---|---|
| useAlternativeLanguage(optional) | If true, then application will be translated into another language | Boolean (true or false) | "useAlternativeLanguage": false, |
| alternativeWebmap (optional) | ID from ArcGIS Online for webmap to use in alternative language | text | "webmap": "de85e3fcc07948238aa6c1afd2a4ceb0", |
| alternativeLanguage (optional) | Identifies alternative language for the application | text | "language": "en", |
| alternativeLanguageTitle(optional) | Title for the MapBuilder application in alternative language | text | "title": "GFW MapBuilder", |
| alternativeLanguageSubTitle(optional) | Subtitle for MapBuilder application in alternative language | string | "subtitle": "Make maps that matter", |
| alternativeNarrative (optional) | Text for the narrative that will be visible in the information tab of the application in alternative language. Users can use html tags to edit and customize the formatting of this text | string | "narrative": "This mapbuilder provides an overview of Land Use in the DRC", |
| alternativeWebmapMenuName(optional) | Text for the narrative in alternative language, text will be visible in the information tab of the application. Users can use html tags to edit and customize the formatting of this text | string | "webmapMenuName": "Land Use", |

## Layer/Analysis Settings

| Property | Explanation | Data type | Example |
|---|---|---|---|
| viirsFires | If true, then the viirsFires layer from NASA will be included in the map | Boolean (true or false) | "viirsFires":true, |
| modisFires | If true, then the modisFires layer from NASA will be included in the map | Boolean (true or false) | "modisFires":true, |
| intactForests | If true, then the Intact forests layer which identifies the world's last remaining unfragmented forest landscapes, will be included in the map | Boolean (true or false) | "intactForests":true, |
| aboveGroundBiomass | If true, then the above ground biomass layer which shows carbon density values of above-ground live woody biomass across the tropics will be included in the map | Boolean (true or false) | "aboveGroundBiomass":true, |
| landcover | If true, then the global land cover layer will be included in the map | Boolean (true or false) | "landcover":true, |
| mangroves | If true, then the global mangrove forest layer will be included in the map | Boolean (true or false) | "mangroves":true, |
| sadAlerts | If true, then the sad alerts layer will be included in the map | Boolean (true or false) | "sadAlerts":true, |
| gladAlerts | If true, then the glad alerts layer will be included in the map | Boolean (true or false) | "gladAlerts":true, |
| terraIAlerts | If true, then the terraIAlerts alerts layer will be included in the map | Boolean (true or false) | "terraIAlerts":true, |

## Other Settings

| Property | Explanation | Data type | Example: |
|---|---|---|---|
| **Iso** *(optional)* | Three letter iso code for country which your application focuses on. All other countries will be masked out | text | "iso":"COD" |
| **hideHeader** | Hide the application header (including logo, title and menu) | Boolean (true or false) | "hideHeader": false, |
| **hideFooter** | Hide the application footer | Boolean (true or false) | "hideFooter": false, |
| **includeDocumentsTab** | Include documents tab in application | Boolean (true or false) | "includeDocumentsTab":true, |
| **mapThemeIds** *(optional)* | Use this option to link several MapBuilders together. Copy the ArcGIS Online application ID for another MapBuilder application and paste it into this field to link the MapBuilders together. If you want to add multiple ids, separate them using a semicolon (;) and add a corresponding Map theme title for each related MapBuilder application in the Map Themes field. | string | "mapThemeIds": "1c38ba1095fe49e3ba234bf9105c1077;c76d788b7487476bae4d09a4e933be19", |
| **mapThemes** *(optional)* | The Map Theme field is only necessary if you are connecting several MapBuilders together. The map theme indicates the title for your related MapBuilder applications. Make sure the themes are specified in the same order as your map Theme Ids. If your MapBuilder is translated, make sure that you also fill out the "alternativeMapThemes" field with your translated map theme titles. | String | "mapThemes": "Forest Atlas of Cameroon;Forest Atlas of Equatorial Guinea", |
| **"alternativeMapThemes"** *(optional)* | The Alternate Map Themes field is used to indicate the title of your related MapBuilder applications in the application's secondary language. This is only necessary to complete if you have translated your application into a secondary language using the alternative language settings and are using the Mapthemes option to connect related MapBuilder applications. | string | "mapThemes": "Forest Atlas of Cameroon;Forest Atlas of Equatorial Guinea", |