MapX User Guide

Version 1.0

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Purpose of this guide

This user guide is the third in a series. If you new to MapX, see Volume 1. If you are curious about the project environment in MapX, see Volume 2. In this guidance document, we tackle uploading your own data into a MapX project. In order to upload and style data in MapX, you must be a publisher or administrator in a project.

What is MapX?

MapX is an innovative spatial data platform to map and monitor the environment and the sustainable use of natural resources using the best available scientific data. It was developed jointly by UN Environment and GRID-Geneva, in partnership with the World Bank and the UN Development Programme. The MapX platform is open source and based on a cloud computing architecture. The goal of MapX is to ensure that different stakeholders have access to equal information in order to improve monitoring and decision-making processes. It aggregates planetary data from trusted sources and offers a series of online tools for analysis, visualization and communication. MapX's front-end can be fully customized and integrated in external web platforms. MapX hosts spatial data to support monitoring and decision making in a range of sectors, including biodiversity, extractives, chemicals and water.

The core mission of MapX is:

- To contribute to global sustainability by offering the possibility to share open, trustworthy data regarding natural resources;
- To increase the capacity of policy and decision makers to access and analyze maps for evidence-based dialogue and policymaking; and
- To be an impartial hub for trusted geospatial data backed by the neutrality of the United Nations.

Key Features of MapX

The MapX application has an easy-to-use toolkit for you to navigate on the latest and most trusted spatial data for natural resources planning.

1. **Spatial data catalogue**: a one-stop shop for countries and stakeholders to freely access and share the best available spatial data, brokered from premier institutions.
2. **Data workspace**: a collaborative, secure and private online space where it is possible to access and manage your dataset.
3. **Data downloading and reporting**: maps can be downloaded and integrated directly into reports. Additionally, the underlying data can be downloaded, streamed and integrated into existing platforms.
4. **Data dashboards**: bring information to life with customized data dashboards and charts. It allows you to monitor progress at a local, national or global level.
5. **Analytical tools**: visualize change over time using a time slider function, and perform overlay analyses to identify conflicting land-uses or opportunities in a few clicks without any additional software.

6. **Story maps**: an innovative data storytelling tool which integrates narratives and multimedia such as photos and videos with interactive maps to reach a wider audience.

7. **Impartial data**: MapX is underpinned by UN impartiality and has the ability to act as a trusted broker of public and private data.

![Fig 1: Biodiversity Intactness Index (2016), T. Newbold et al.](image)

**Disclaimer**

This user guide provides you instructions to access, search, visualize and upload data, and conduct basic analyses, and download data layers and maps. It is designed for open and offline access. It was made by the MapX technical team in February 2019 and will be updated on a regular basis (every four months) to reflect changes occurring in the platform. If you notice any discrepancies between the MapX tool and the most recent user guide, please keep in mind that another version of the guidance may be launched soon, or don’t hesitate to contact us at support@mapx.org to have further explanations.
**Glossary**

MapX uses a specific vocabulary that users must be familiar with to interact with the platform. Here is a glossary to help you in your user journey:

**Abstract:** In MapX, abstracts describing the attributes that are being displayed are located below the legend and above the View Toolbar in each view.

**Attributes:** Attribute data is information which describes the *what, why, and how* in tabular format of spatial features. In MapX, when you click on a point, line, or polygon, the pop-up will contain attributes of that feature. MapX can only display single attributes from a spatial dataset at a time.

**Layer:** A layer is a category of visualized data which includes: vector tiles, raster tiles, custom code and custom layers. It does not include story maps.

**Metadata:** A set of data that describes and gives information about other data. In MapX, complete metadata is important in verifying data integrity and accuracy. You can check the metadata of each dataset by clicking the small "I" located beneath the abstract of each view.

**Project:** A project is a password-protected work environment in MapX. It is administered either by the MapX team or by the user itself. A project contains data already pre-populated or data that have been uploaded by the user.

**Source:** The data uploaded into projects by MapX users are called sources. These sources are then visualized into views that can be selected on the MapX web app. Please note that sources are not visible on the platform and require to be processed into views before they are seen by users.

**Story map:** A story map is a web application that combines a spatial data with narrative, usually involving text and multimedia content, including photos and videos. The MapX story map engine allows users and visitors of the platform to independently visualize story maps using live data that is streamed from MapX.

**View:** Views display a single attribute from a source dataset that have a spatial element. The difference between what you may know as a layer and we call a view, is that views can only show one attribute at a time, while typically layers in geospatial software can show multiple attributes. Each view is described with an abstract for that attribute and the metadata information of the source dataset from which it was created. User privileges of each view may differ from those of the source dataset.

**View Panel:** The view panel is the legend at the left of the MapX web page. It contains the list of views in each project, the language controls, and the search and filtering functions. To learn more about the view panel functions see “How do I explore data?”
**View Toolbar:** The view toolbar is the small collection of buttons that occurs horizontally beneath the abstract of each view. To learn more about the view toolbar functions, check the section "What is the view toolbar?"

**Toolbar:** The MapX toolbar is the collection of navigation buttons that lie horizontally across the top of the MapX web page. For a more in-depth look at what each one of these buttons does, check the section "What are the Navigation Buttons?"
First: Make sure your data is ready

Which users can upload spatial data to MapX?
Only users that have publisher or administrator access to a project workspace can upload their vector data and manipulate it for comparison against existing datasets on the platform. If you would like to create a project workspace, contact the support team.

What type of spatial data can be uploaded into my MapX project?
Only vector data can be uploaded into a MapX project via the website. Raster data must be hosted from an external WMS - learn more about creating a WMS request.

In order to upload vector data, it must be compatible with an open source format. This means it must be an ESRI Shapefile, GeoJSON, GPX, or KML file. A GeoJSON format is recommended. If you are unsure, you can see if it is compatible by using an open source software such as QGIS. ESRI Shapefiles must be zipped. Zipped files must include the .shp, .shx, .dbf and .prj files.

What format should my coordinates and projection be in?
Your latitude and longitude coordinates should be in decimal degrees. All spatial files also need to be in the WGS 84 (EPSG:4326) projection, QGIS can be used to confirm and change projection.

What is the maximum file size to upload data?
Your data must be 300 mb or less. If you need to upload a larger file, please contact MapX support.

Second: Upload your data into your MapX project

How do I upload a new data source?
Once you are certain your data is in a compatible format, you can either upload your data by dragging and dropping it into the mapping interface (if the file is less than 100 mb), or use the toolbox for a manual upload (if it is between 100 and 300 mb). We strongly suggest using the manual upload, as it is the most stable method of data upload and is especially suitable for computers with below average hardware.

After uploading your source layer using either method, you will then need to add metadata and style the view. The methods are as follows:

Manual upload
a. Navigate to the Toolbox (red circle).
b. Under Sources, click “Add a source layer” (red box), and title your data.
c. Find your file and click “Open”. When it is complete the dialogue will read “Upload done” written in green.

d. The dataset is now stored into the MapX Lab database as “source layer”. It can now be used to create views.

![MapX platform, add a new source layer](image)

Fig 2: MapX platform, add a new source layer

**The drag and drop method**

a. Within your project, drag and drop the file into the MapX webpage.

b. You should be able to see your data immediately in your area of interest. A temporary view of the source layer will appear in the view’s panel with an orange button. The orange color indicates that the view is only visible in your browser and that it hasn’t been saved in the database. In order to finalize the data upload, click the cloud button (red circle) underneath the title of the temporary view. Once the upload is finished, a new source layer is saved in the MapX database and is available in your data workspace.
c. Remember to delete the temporary view (with the orange button) at the end of the process, as you will create a stable view out of the source data immediately. Click the “Garbage can” icon (red circle) in the view toolbar beneath the temporary view.

Third: Define metadata and style your view

How do I add metadata for my uploaded source dataset?

Once your vector file is uploaded in the MapX database, using either the toolbox or the drag and drop methods, it is almost ready to be displayed on a map. However, you will
first need to add information into the platform to let the other users understand what the data are about. This is called “metadata”. Metadata is almost as important as the data itself, as we can assess the integrity and accuracy of the dataset. Find out more about each of the MapX metadata fields here. Note that the metadata of your source data should describe the entire dataset, not just the attribute you want to display.

1. Go to “Toolbox” (red circle)
2. Click “Edit Sources Metadata” (red box) to fill out the metadata for the entire dataset. At the very minimum, your source must include a title and abstract (blue box).
3. Fill out contextual information about the entire dataset to the best of your ability, then click “Save” and “Ok”.
4. If you cannot click “Save”, it is because you have left a mandatory part of your metadata empty. The red lines at the left side of the pop-up will direct you to where the empty field is.

![MapX platform, metadata window](image)

**Fig 5: MapX platform, metadata window**

**How do I allow my dataset to be downloadable?**

Whether a source can be downloadable will depend on the licensing of the data provider. Please check with your data provider whether data can be redistributed. For more information on licenses click [here](#). To allow download of a data source, navigate to “Manage sources” in toolbox (red circle and box). Under “Services”, select “Allow this source to be downloaded”.

"Service"
Advanced: You can also choose to publish related views as a WMS (Web Map Service), WFS (Web Feature Service), and WCS (Web Coverage Service). These three options are three web service standards from the Open Geospatial Consortium (OGC). These allow web clients to query and receive geographic information in the form of image, vector, or coverage data. To learn more, click here.

Fig 6: MapX platform, allow download of your data

How do I define access privileges for uploaded source layers?
To select which user groups have use and/or write access to your dataset click “Manage Sources” (red box), select your dataset and define use and write access user groups. By adding a certain user group to write access, such as publishers, this means that publishers will be able to edit the source metadata and create views out of the data. Use means that particular group will be able to see the data and create a new view, but will not be able to edit the metadata. For more information about the groups and various rights granted to publishers, admins and members, see the guidance document on project administration.
Fourth: Visualizing Data - Creating Views in your Project

How do I create a view out of my uploaded data?

1. Click “Create a new view” to load your view into your project. Choose vector tile, give a title to the view (which is how it will be displayed in the view panel), and click “Create”. This should automatically create a new permanent view in the view panel (the “bullet points” button next to the toolbox). Go to the view panel and select the view you’ve just created. It will be the first one in your menu. The view will be empty and only visible and editable by the user that created it (you!). The next step will be choosing the data to fill this view.
2. Navigate to the view panel (red circle), activate your new view by clicking on the button, and select the pencil button “configure the view” in the view toolbar beneath your new view title (red box). Fill in the title and the abstract, and select the types of users who will be able to see the view, and the ones who will be able to edit it (more information about the different types of users in the administrator guidance document).

![MapX platform, configure the view](image)

Select which primary attribute you would like to display, meaning which attribute will appear on the map. Select as many secondary attributes as you like, which will appear in a pop-up when a feature is clicked. Your data is now available for visualization on map within your project!

**Note:** If you cannot “Save” your configuration, it is because a mandatory field is empty. The red lines at the left side of the pop-up will guide you to which mandatory field must be filled.
Note: all these parameters can be changed anytime by repeating the previous step in the configuration window.

**How do I style a view?**

Once your view is inside your project, the style will be automatically defined. By default, all data will display all of the attributes as a single color. To customize your view and create classifications by color, size or symbol, let’s style the legend. Note that you can only style views that you have edit access for. Styling involves selecting the attributes you want to display, choosing the colors and the legend. We will walk you through each step.

**Create the legend:**

To do this, click the button with a paintbrush (red circle). Each separation in your legend will be called a rule (red box). Create one rule for each separation of your data you want to create. The “Value” input is the starting point for the rule. As a default, the value you select will display in the legend in the view panel. If you would like to customize the name of the value (for example, by writing a range of 5–9), write the name for it in “Label”. Click the “Ignore missing values” button (blue box) in order to remove missing values from your legend.
Style your quantitative legend:

Style your legend using the various size and color options, and move the labels up or down using the arrows at the end of the row. Note that opacity is the inverse of transparency, so here we are selecting and option for 30% opacity (70% transparency). Clicking preview will help you visualize how your new legend and view will look as you experiment with your legend. Click save when you are satisfied with your legend.

Fig 11: MapX platform, legend of numeric values

Fig 12: MapX platform, legend of numeric values (bis)
Style your qualitative legend:

You can also create rules with non- numerical data, meaning with qualitative data. If you want to separate values based on names, click the value field and choose from the drop-down menu whichever value you want to display. In qualitative cases, each rule will only include the value that you select. You can also type in “all” if you wish to style all of your qualitative features the same way. If your data contains a large number of unique values, the value may not show up in the dropdown, rather start typing the name of the value you would like and it will come up in dropdown.

Fig 13: MapX platform, legend of qualitative values

Finally: Deleting a View and its Source

To delete an uploaded view, just click the garbage can in the view toolbar beneath the view you would like to delete. Note this can only be done if you have editing access to the view.
To delete the source data, you must delete all views that display attributes from the source dataset. Navigate to the toolbox and, under “Sources”, click “Manage Sources”. Find the source you would like to delete. You will have the option to delete the source at the bottom of this page.

**Fig 14: MapX platform, delete a view**

**Fig 15: MapX platform, delete a source**
Next steps

Congratulations! You have now a full knowledge of the MapX platform, from its most basic functionalities such as interacting with data or creating maps, to its more advanced operating system such as the project workspace management or the uploading your own data into the platform. Our final guidance document deals with creating story maps within MapX projects, and will be available for download in April 2019. These guidance documents, along with additional FAQs and resources, are available for download on the MapX website, under the “knowledge base” section.

Questions?

Don’t hesitate to contact us at support@mapx.org