
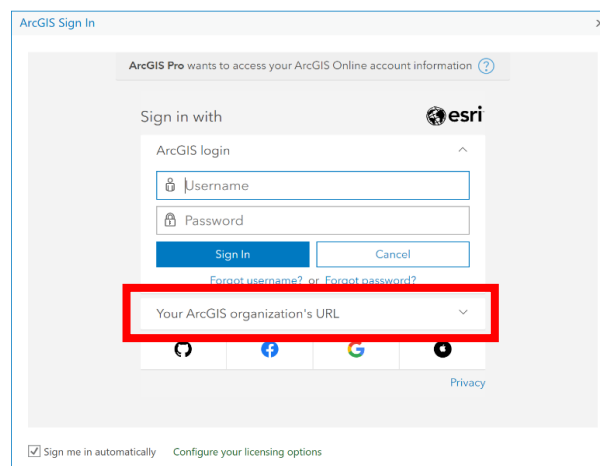


This instruction sheet aims to help you set up a Map File for use in ArcGIS Field Maps for both students and researchers. ArcGIS Field Maps allows you to record data in the field and streamline data processing once you return to the lab. However, before collecting your data, you need to create a Map File in ArcGIS Pro that contains the template feature layers for each type of data you may wish to collect and the datasets (e.g., LiDAR DSM) that may aid your fieldwork.

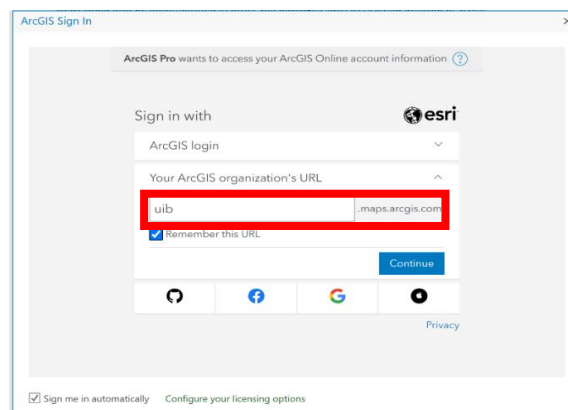
To begin with, we need to access the latest version of ArcGIS Pro, version 2.8.3. Go to apps.uib.no/login and sign in to AppsAnywhere using your UiB credentials. Once you have signed in, you will be prompted to Open AppsAnywhere Launcher; click 'Open AppsAnywhere Launcher' in the browser box. Once you have clicked the button, wait to be verified by the webpage (this can be seen at the top of the webpage). Following the successful validation message, search for 'ArcGIS Pro' in the search bar located in the top right of the screen. Next, hover over the app icon and click 'Launch 2.8'. Again, you will be prompted to 'Open AppsAnywhere Launcher', click 'Open AppsAnywhere Launcher'. The *Cloudpaging Player* window will appear on your screen. Wait for ArcGIS Pro to initialise and then click the 'Launch' () button, and ArcGIS Pro will open.

The first time you open the software, you will be asked to sign in. All students and staff at the University of Bergen can use their UiB login credentials to sign in to ArcGIS Online and ArcGIS Pro.

1. After opening ArcGIS Pro for the first time, click on *Your ArcGIS organisation URL*.

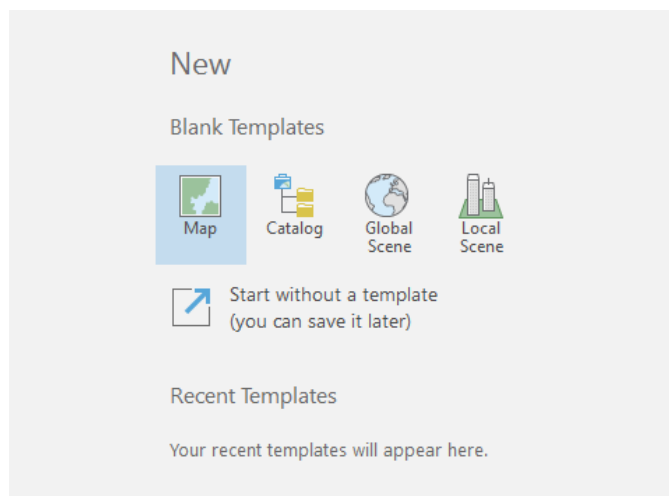


On the next page, enter *uib*, tick “remember this URL” below, and then click ‘Continue’.

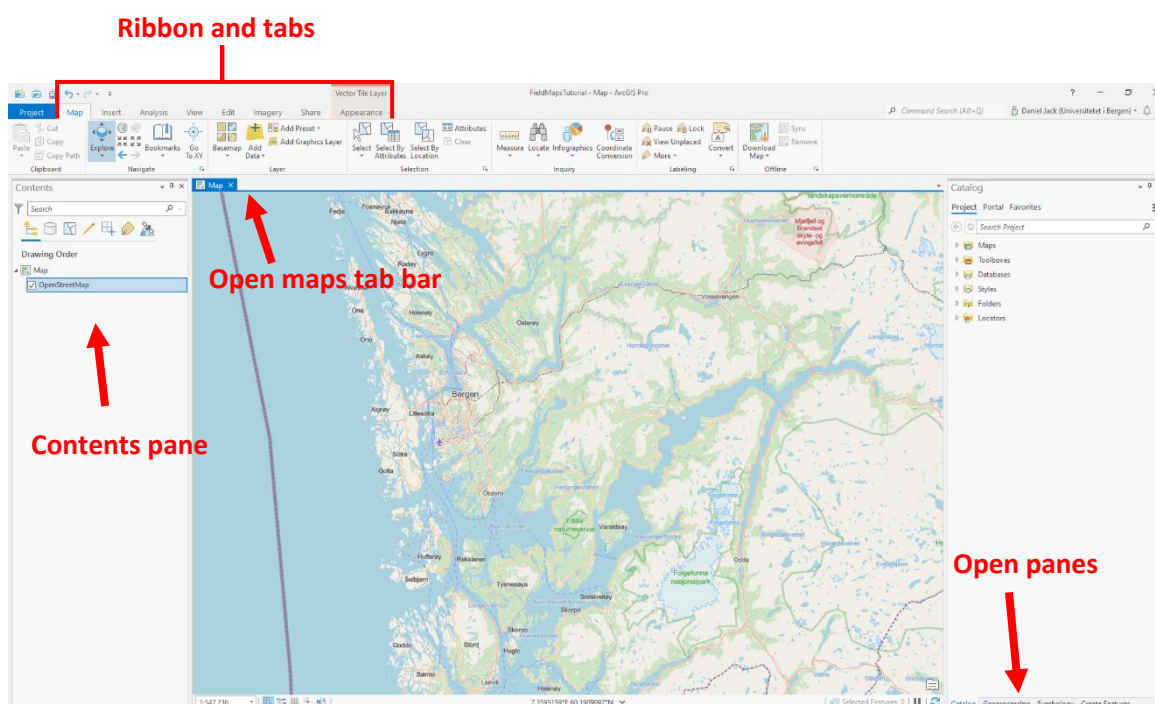


Then click 'UiB (O365) Login' and proceed to log in with your UiB account. ArcGIS Pro will now open up.

2. Once logged in, click the **Map** (🗺️) button located beneath *New – Blank Templates*. Give your project a name and define the save location (you can use the default location unless there is a specific location on your drive you wish to save the project to).



ArcGIS may be structured differently from the GIS packages you have used before. A summary of some of the tabs and panes is given in the figure below.

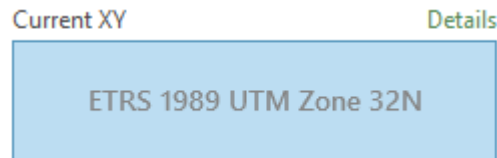


Now that the project is set up, we will prepare it for use in ArcGIS Field Maps.

1. As a first step, we may need to change the projection of our map to match the coordinate system most appropriate for our study region. By default, the map is set to 'ETRS 1989 UTM Zone 32N', perfect for working in southern Norway. However, if you are working in Nordland or Troms og Finnmark, you will need to change it.

In the *Contents* pane, right-click **Map** and then click **Properties**. In the *Map Properties* pop-up box, go to the *Coordinate Systems* tab. In the **XY Coordinate Systems Available** box, you will

see 'ETRS 1989 UTM Zone 32N' highlighted in blue; beneath, you will also see zones 33N-36N, which cover the northern regions of Norway. Click the zone you need so that it is highlighted, and you will see the **Current XY** box located above has changed to your selected coordinate system. Click **OK** at the bottom of the pop-up box to confirm your selection and close the pop-up.



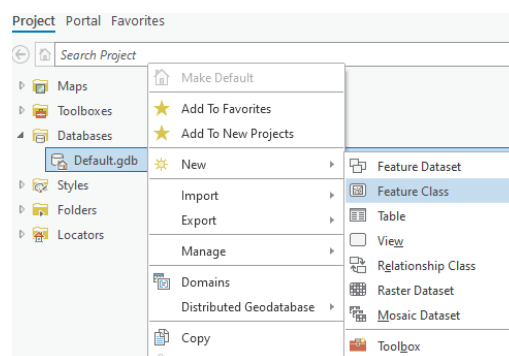
If you are working further afield outside of Norway, you can find additional UTM Zones in the **XY Coordinate Systems Available** box under *Projected Coordinate Systems* → *UTM* → *WGS 1984* → *Northern Hemisphere/Southern Hemisphere*. If you are unsure of the UTM coordinate system you should be using for your study region, you can use [this online interactive map](#) to determine which projection to use.

Once changed, all the feature layers you create and add to the map in the later steps of this instruction sheet will be georeferenced using your map's coordinate system. Therefore, it is important that you are sure of the coordinate systems you will be using before you continue, as changing the coordinate system of feature layers and raster layers can be laborious and occasionally computationally intensive to perform. **NB:** You cannot publish layers with different coordinate systems to your map to ArcGIS Online.

2. We need to choose an appropriate basemap layer that can provide useful auxiliary data that enhances our interpretational ability when working in the field. Go to the *Insert* tab on the ribbon. Click the *Basemap* (🗺️) drop-down button. Here you can see an array of basemap layers available for use.

Scroll down to find the **Bilder (UTM32)** or **Bilder (UTM33)** basemap layers (choose according to your coordinate system). This basemap layer provides high-resolution satellite and ariel photography of Norway dated from 2019. The imagery is used based on image data used by Kartverket, Geovekst, and Norway's municipality authorities. If working outside of Norway, the 'Imagery' basemap layer provides high-resolution (<1 m) imagery of the rest of the world.

3. Now we will create and add the feature layers we will use to collect data in the field. In the *Catalog* pane on the right-hand side, under the *Project* tab, click the arrow next to 'Databases' to reveal the 'Default.gdb' database. This database will contain all the feature classes you create. To add feature classes to the database, right-click the database, click 'New', followed by 'Feature Class'.



A new pane, *Create Feature Class*, will replace the *Catalog* pane. The pane features 6 tabs: (1) Define; (2) Fields; (3) Spatial Reference; (4) Tolerance; (5) Resolution; and (6) Storage Configuration. We only need to concern ourselves with the first 3.

1. Define - Name your Feature Class according to the data you wish to collect. **NB:** Feature Class names cannot feature 'space' characters when saved to your database, use underscores (_) instead. Setting the 'Alias' is optional. Below you can set the 'Feature Class Type', choosing between a multitude of options. Typically, you will choose to create either Polygon, Line, or Point feature classes according to the type of data you wish to collect:
 - a. A polygon is a closed shapefile that defines an area within a connected sequence of coordinates. Useful for demarcating the area of a landform or any other entity that can be defined by an area.
 - b. A line (or polyline) is a shapefile defined by one or a series of paths. Useful for plotting transects or waterways.
 - c. A point is a shapefile containing a single set of X and Y coordinates. Useful for plotting areas of interest, sample collection location, or sediment coring locations.

Leave the remainder of the options as their default once you have chosen the 'Feature Class Type'. Click 'Next' at the bottom of the pane.

In this example, we are going to call our Feature Class 'Sediment_Sample_Location' and set the 'Feature Class Type' to *Point*. The purpose of this Feature Class is to demarcate the positions of our sample collection locations.

2. Fields – Fields are the columns of our *Attribute Table*. Each field can store a specific data type, such as text, dates, and numbers.

In the *Fields* pane, click 'Click here to add new field' located beneath the existing table.

Field Name	Data Type
OBJECTID	OBJECTID
SHAPE	SHAPE

Click here to add a new field

You will give each Field a name in the *Field Name* column and a corresponding data type in the *Data Type* column. You can choose from a selection of data types:

- *Short integer*, *Long integer*, *Float*, and *Double* concern number inputs, with the maximum amount of numbers you can input for the field increasing in size from *Short integer* to *Double*. Typically, *Long integer* is the most appropriate data type for storing numbers.
- *Date* allows you to record dates and times.
- *Text* allows you to input textual descriptions. The character limit is set to 255 by default.
- *BLOB* (Binary Large Object) allows you to store large binary code sequences.
- *ObjectID* allows for unique ID numbers for each row in your attribute table. You can see that *ObjectID* has already been added by default by ArcGIS Pro.
- *Global ID* and *GUID* store unique strings of characters that can be used to identify features within a geodatabase and across geodatabases.

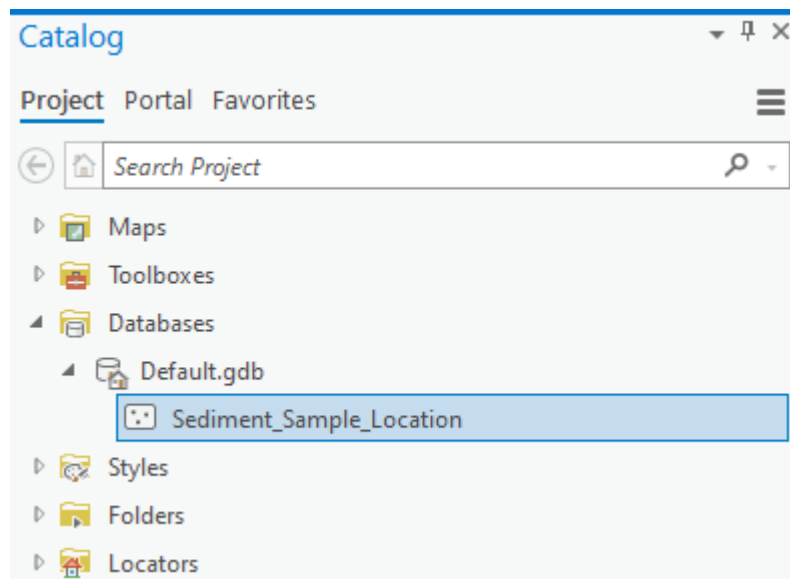
There are many fields you may want to consider adding. In the *Sediment_Sample_Location* example, we have included 'Name of Area', 'Name of sample bag', 'Date of Collection', 'Deposit type', 'Sample Depth', 'Description of Area', and 'Collector Name'. Of course, the names of the fields you add will vary dependent on the data you need to collect for the Feature Class. Once you have added all the fields you wish to add, click 'Next' at the bottom of the tab.

Field Name	Data Type
OBJECTID	OBJECTID
SHAPE	SHAPE
NameOfArea	Text
NameOfSampleBag	Text
DateOfCollection	Date
DepositType	Text
SampleDepth	Long Integer
DescriptionOfArea	Text
CollectorName	Text
Click here to add a new field	

NB: Attributes such as area and length are automatically added by ArcGIS when working with Polygon and Polyline feature classes, so there is no need to add them yourself.


3. Spatial Reference – By default, the spatial reference for the Feature Class will be set to the XY Coordinate System you set earlier for your map; therefore, you do not need to change anything in this tab. However, if you wish to change the reference

for whatever reason, you can do so here. From here, you can click ‘Finish’ at the bottom of the tab. Once the Feature Class is created, ArcGIS Pro will return you to the *Catalog* pane, and you will find your new Feature Class located in your Default.gdb database.




The feature class will also appear in the *Contents* pane on the left-hand side of the screen.

4. You can make changes to your new Feature Layer following creation if, for example, you need to add a Field column you forgot, change the data type of the Filed columns, or further adjust the type of data you can collect.

Select the Feature Class in the *Contents* pane and open the *Data* tab on the ribbon. Within the *Design* group, click the *Fields* () icon. A new Fields tab will open on the *Open Maps Tab Bar*.

Fields: Sediment_Sample_Location											
Current Layer: Sediment_Sample_Location											
<input checked="" type="checkbox"/> Visible	<input checked="" type="checkbox"/> Read Only	Field Name	Alias	Data Type	<input checked="" type="checkbox"/> Allow NULL	<input type="checkbox"/> Highlight	Number Format	Domain	Default	Length	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OBJECTID	OBJECTID	Object ID	<input type="checkbox"/>	<input type="checkbox"/>	Numeric				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shape	SHAPE	Geometry	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NameOfArea	NameOfArea	Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>				255	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NameOfSampleBag	NameOfSampleBag	Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>				255	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	DateOfCollection	DateOfCollection	Date	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	DepositType	DepositType	Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>				255	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	SampleDepth	SampleDepth	Long	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Numeric				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	DescriptionOfArea	DescriptionOfArea	Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>				255	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CollectorName	CollectorName	Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>				255	
Click here to add a new field.											


Here, you can make changes to your field columns. For the ‘Sediment_Sample_Location’ example, double-clicking ‘Numeric’ in the *Number Format* column allows us to adjust the number of decimal places or set the number type to ‘Percentage’ or ‘Angle’, among others. We can also adjust the number of characters we can enter into our text fields so that we may enter more detailed descriptions or the date format of our date fields in the *Number Format* column.

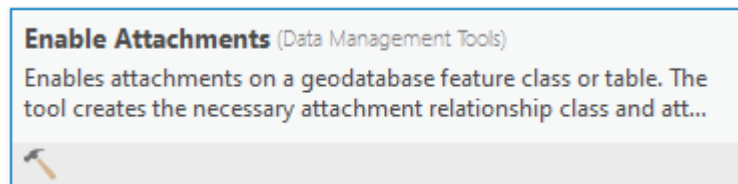
Once you have made your changes, save them by clicking the *Save* () icon in the *Fields* tab on the ribbon. Close the Fields tab by clicking the ‘x’ in the *Open Maps Tab Bar*.


5. If you have created polyline and polygon feature classes, you are required to change the 'Display Field' from 'Shape_Length' for the feature class in order to publish the map to ArcGIS Online later.

In the *Contents* pane, right-click the feature class and click *Properties*. In the *Layer properties* pop-up, go to the *Display* tab. In the *Display Fields* drop-down list, select an attribute feature other than 'Shape_Length' or 'Shape_Area'. Once chosen, click 'OK' at the bottom of the pop-up.

6. Using the 'ArcGIS Field Maps' app, it is possible to add attachments (e.g., photos, videos, audio, and documents) to your polygon, polyline, and point feature classes. By default, feature classes are not set up to store attachments. To allow the feature class to store attachments, we will run the *Enable Attachments* tool.








In the *View* tab on the ribbon, click the *Geoprocessing* () icon. The *Geoprocessing* pane will now open on the right-hand side of the screen. In the search bar at the top of the *Geoprocessing* pane, search 'Enable Attachments' and open the *Enable Attachments* tool.




Set the *Input Dataset* parameter to the dataset you wish to allow attachments to be added to. Then, click 'Run' () at the bottom of the pane. Once the tool has finished running, you will be able to add attachments to the feature layer out in the field. **NB:** The *Enable Attachments* tool creates a geodatabase table and geodatabase relationship class, which you can view in your Default.gdb database.

7. If you have pre-existing feature classes or auxiliary datasets you wish to use to aid your fieldwork and data collection, such as Digital Surface/Terrain Models (DSM, DTM), contour lines, or other imagery, you can add those to your map now.

It is important to remember that high-resolution datasets have large file sizes. In order for you to use these files in the field where you may not have cellular service, you will need to download these files to the ArcGIS Field Maps app on your device. Ensure your device has enough storage to save your map with the dataset file included. Do not let this deter you from using high-resolution datasets, as later in this instructions sheet, you will find out how to subset maps for offline use, which can significantly reduce the amount of storage you need to download your map.

To add data in ArcGIS Pro, you can drag and drop the dataset file from the 'Windows File Explore' () app into the *Contents* pane. Alternatively, under the *Map* tab on the ribbon, click the *Add Data* () button located in the *Layer* group. The 'Add Data' pop-up window will open. Here, you can search your computer () for the files you wish to add. You can also find files in the Portal (). Within the Portal, you have access to files published on ArcGIS online (), ArcGIS Living Atlas (), and files previously published by other UiB users on ArcGIS online ()

- Once you have added all the layers to your map, you are ready to publish it to ArcGIS Online. Open the *Share* tab on the ribbon. Within the *Share As* group, click the *Web Map* () button. The *Share As Web Map* pane will open on the right-hand side of the screen.

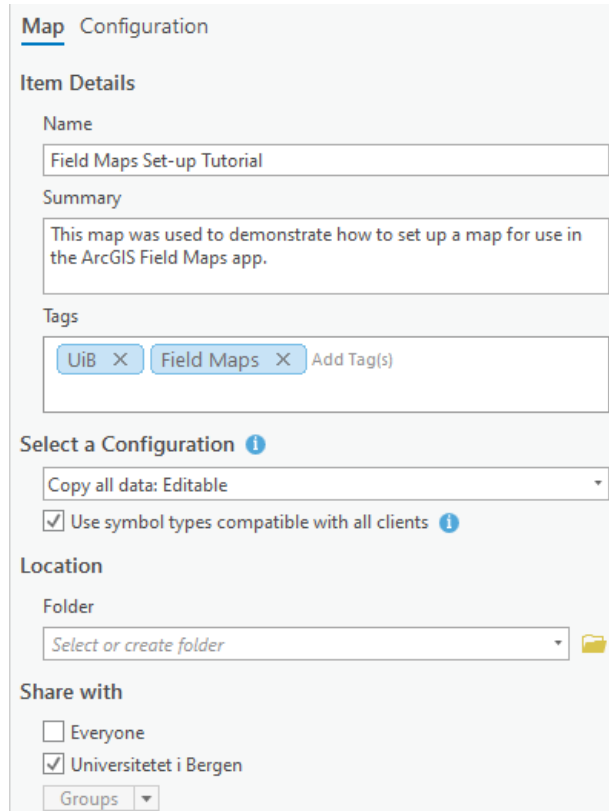
Give your map a name that makes it easily identifiable. You are also required to provide a summary (description) of the map and tags before you can publish it. Choose appropriate tags based on the content of your map and its purpose. **NB:** Press the 'Enter' key on the keyboard to add the tag.

From the 'Select a Configuration' drop-down, select the 'Editable' configuration. The 'Editable' configuration is the only configuration that allows you to collect data and edit feature classes (add attributes) in the field.

It is not necessary to select a location folder.

You can set the sharing option for your map. Leaving the checkboxes empty publishes the map to your ArcGIS Online account and is only visible to you. Checking the 'Universitetet i Bergen' check box shares the map with all users with accounts on the UiB ArcGIS server. Checking the 'Everyone' text shares the map with the public – you may wish to choose this option if you are publishing the map for use at multiple institutions. Additionally, if you are part of a group within UiB's ArcGIS Online server, you will have the option to share the map within your group too.

NB: You can change the sharing options for your map once it has been uploaded to ArcGIS Online.

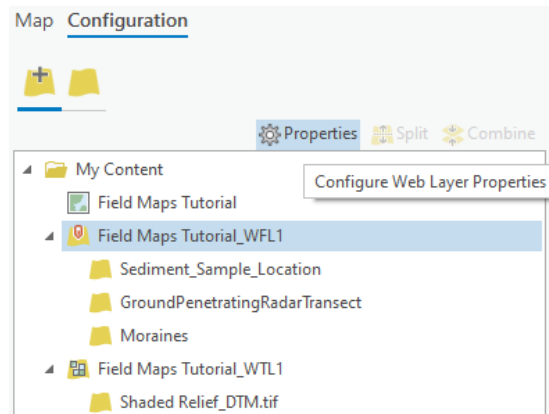


The screenshot shows the 'Share As Web Map' configuration pane in ArcGIS Online. It is divided into several sections: 'Item Details' with fields for 'Name' (Field Maps Set-up Tutorial) and 'Summary' (This map was used to demonstrate how to set up a map for use in the ArcGIS Field Maps app.); 'Tags' with 'UiB' and 'Field Maps' tags; 'Select a Configuration' with a dropdown set to 'Copy all data: Editable' and a checked box for 'Use symbol types compatible with all clients'; 'Location' with a 'Folder' dropdown set to 'Select or create folder'; and 'Share with' with checkboxes for 'Everyone' (unchecked) and 'Universitetet i Bergen' (checked), and a 'Groups' dropdown.

- Once you've set the item details, configuration, and sharing parameters, open the *Configuration* tab at the top of the *Share As Web Map* pane.

In the main box of the *Configuration* tab, select the item with the ‘_WFL1’ extension, and then click the *Properties* button. The *Configure _WFL1 web layer* pane will open.

Items with the _WFL extension are ‘Web Feature Layers’. In this case, the layers within the _WFL group will be the feature classes you created earlier.



Items with the _WTL extension are ‘Web Tile Layers’. Layers within the _WTL group are layers that come in the form of tiles, such as raster layers. These layers are always non-editable within ArcGIS Field Maps.

NB: Your Web Tile Layers are converted to .jpg and .png formats following their upload to the ArcGIS servers. This means Web Tile Layers cannot be used to perform geoprocessing tasks in ArcGIS Pro following fieldwork. Ensure you keep the original raster (.tif) files if you wish to use them later for geoprocessing.

Under the *General* tab, you can change the name of the Web Feature Layer, its summary and tags, as well as setting any folder you may wish to save the Web Feature Layer located in your ArcGIS Online profile.


Once you have finished in the *General* tab, open the *Configuration* tab at the top of the pane. Beneath the ‘Operations’ drop-down, you can select the accessibility and editing permissions of the Feature Layers on your map.

- a. Ticking the ‘Approve for Public Data Collection’ box is only necessary if you are sharing the map with institutions and groups outside of UiB.
- b. Beneath the greyed out ‘Enable editing and allow editors to:’ section, you can select the editing permissions of the layer. The permissions for each option are as follows:
 - i. Add, update, and delete features: Users can add, update, and delete feature geometry and alter existing attributes or features. This is generally recommended for all scenarios.
 - ii. Update feature attributes only: Users can only update attributes for existing features. They cannot create, modify, or delete existing feature geometry.
 - iii. Add feature only: Users can add new features and enter new attributes for these new features. They cannot modify or delete existing feature class geometries or

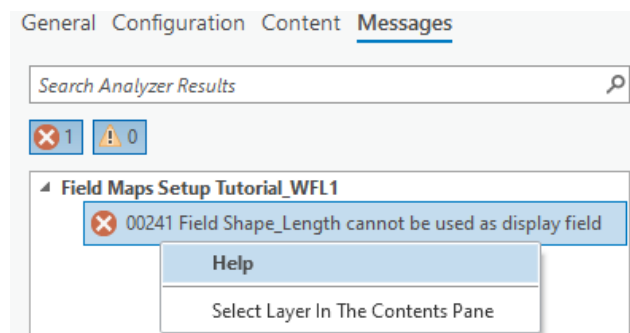
attributes. You may wish to select this option if working in large groups (e.g., field classes) to prevent the accidental deletion of features.


- c. Ticking the 'Enable Sync' allows you to work with a local (downloaded) copy of the Web Feature Layer. It is highly recommended you check this box, as it allows you to add, update, and delete features offline - i.e. if you lose cellular connection out in the field or are going to an area with no cellular service at all. Once you reconnect to the server, the changes you made offline will synchronise with the online map.
- d. Export data allows other users to export the data to other formats.

Under the properties drop-down, ensure you have 'Apply default to features with Z-values (leave the default z-value as 0)' and 'Allow geometry updates without m-value' ticked. You can optionally select 'Preserve editor tracking info'; this allows you to track which users edited features and attribute fields. With this selected, you may encounter issues editing pre-existing feature classes created on a desktop rather than on ArcGIS Field Maps.

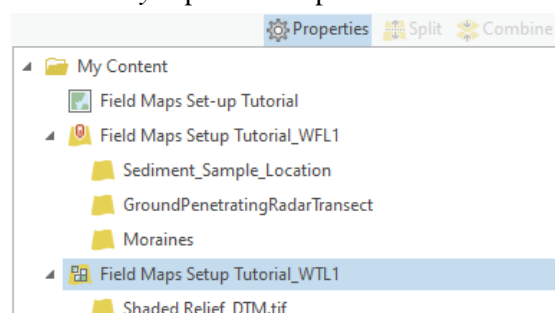
Once you have finished in the *Configuration* tab, click the 'Analyze' () button at the bottom of the pane. The *Messages* tab will open in the pane. Analysing the Web Feature Layer will check for potential performance errors or bottlenecks. Errors with a '✖' symbol must be addressed before publishing to ArcGIS Online, whereas errors with a '⚠' are recommended fixes but do not have to be addressed before publishing.

To address the errors, right-click the error in the *Message* tab box, and then click 'Help'. You will be directed to an ArcGIS help webpage that will provide instructions on fixing the errors.





Once you have run the analysis and addressed any errors, you have finished configuring your Web Feature Layer. Return to the *Map* pane by clicking the back arrow () at the top of the pane.

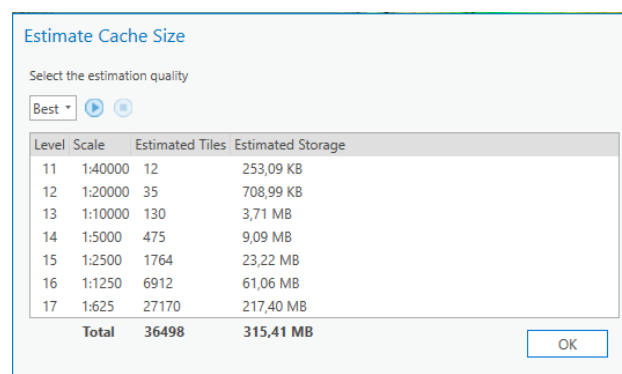
10. We will now configure our Web Tile Layers (_WTL). In the *Share As Web Map* pane, open the *Configuration* tab. Select the item with the '_WTL1' extension, and then click the *Properties* button. The *Configure _WTL1 web layer* pane will open.



Under the *General* tab, you can change the item details and set the ArcGIS Online save folder.

Once you are finished in the *General* tab, open the *Configuration* tab from the top of the pane.

1. Dependent on the type of datasets you have in the Web Tile Layer group, you will see different options for choosing a 'Tiling Scheme'. In most cases, you won't be able to select the Tiling Scheme; instead, you will be set at the default 'Same as basemap', which is perfectly fine for ArcGIS Field Maps.
2. The Tiling Scheme determines the level of detail your Web Tile Layers provide, their format, and compression. Under 'Levels of Detail', you can adjust the sliders to set the map scales at which the Web Tile Layers will be generated. You can use the scale box located in the bottom left of the *Open Map* tab to determine the minimum scale you will view the Web Tile Layers from – this can be in reference to the size of the study area, for example. It is recommended that you set the maximum scale to the highest possible to view the layers at smaller scales.
3. Set the 'Image Format' to 'Mixed' and set the 'Compression' to 75. You may wish to increase the compression to preserve finer details at smaller scales; however, this comes at the cost of large file sizes. Ensure your mobile device or tablet has enough storage space to download the map if you increase the compression.
4. Under the 'Options' drop-down, you can choose how to build the cache. If the cache size is small, set the cache to build automatically on the server. If the cache is large, set the cache to build manually on the server.
5. You can estimate the size of the cache by clicking 'Calculate' () under the 'Estimate' tab. Clicking 'Calculate' opens the 'Estimate Cache Size' pop-up window. In the drop-down box, you can choose 'Good' or 'Best' for the estimation quality. It is recommended that you choose 'Best' to know how large your cache size will be. Click 'Run' (.







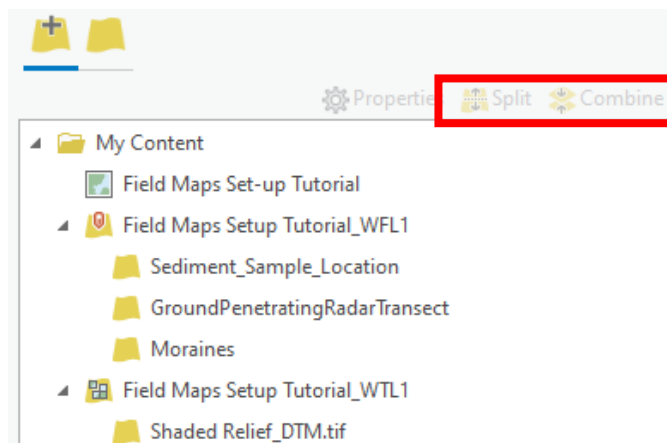
The image shows a dialog box titled "Estimate Cache Size". At the top, it says "Select the estimation quality" with a dropdown menu set to "Best". Below this is a table with four columns: "Level", "Scale", "Estimated Tiles", and "Estimated Storage". The table contains seven rows of data for levels 11 through 17. At the bottom of the table, there is a "Total" row showing 36498 tiles and 315.41 MB of storage. An "OK" button is located at the bottom right of the dialog box.

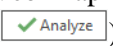

Level	Scale	Estimated Tiles	Estimated Storage
11	1:40000	12	253,09 KB
12	1:20000	35	708,99 KB
13	1:10000	130	3,71 MB
14	1:5000	475	9,09 MB
15	1:2500	1764	23,22 MB
16	1:1250	6912	61,06 MB
17	1:625	27170	217,40 MB
Total		36498	315,41 MB

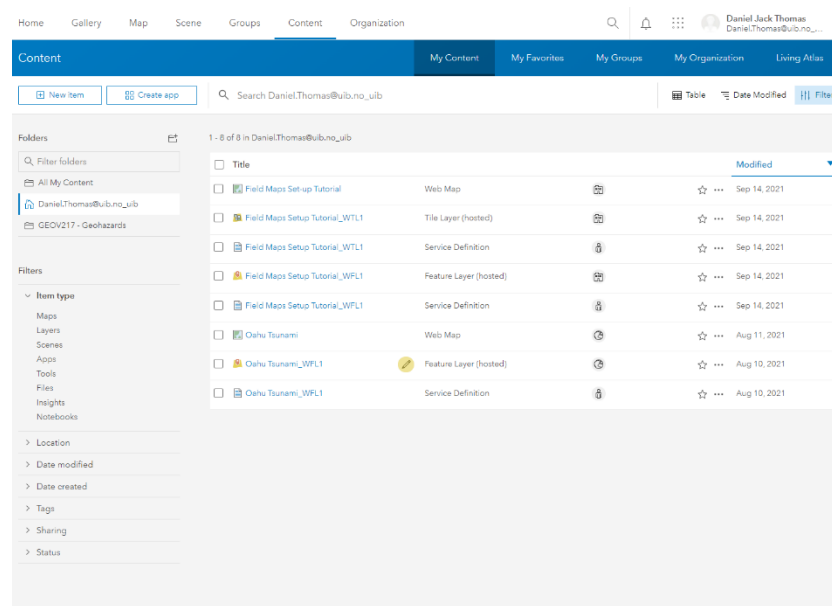
If your estimated cache size is greater than 70 MB, it is recommended that you choose the 'Cache manually on server' option.

Finally, check the 'Allow clients to export cache tile' box. This allows you to download the tiles for offline use. You can set the maximum number of tiles a user can download in a single request. You can see the number of estimate tiles in the 'Estimate Cache Size' results.

6. Once you have finished in the *Configuration* tab, click the ‘Analyse’ () button at the bottom of the pane, address any potential errors, and return to the *Map* pane by clicking the back arrow () at the top of the pane.
11. If you have existing Feature Class layers you do not wish to allow editing for, you can separate it from *_WFL1* by selecting the layer in the *Configuration* tab and then clicking the ‘Split’ () button. This will create a new Web Feature Layer with the extension *_WFL2*. You can change the editing permission of the new Web Feature Layer by following instruction 9. You can return the new Web Feature Layer to the original by holding the Ctrl key, selecting the two *_WFL* layers, and clicking the ‘Combine’ () button.



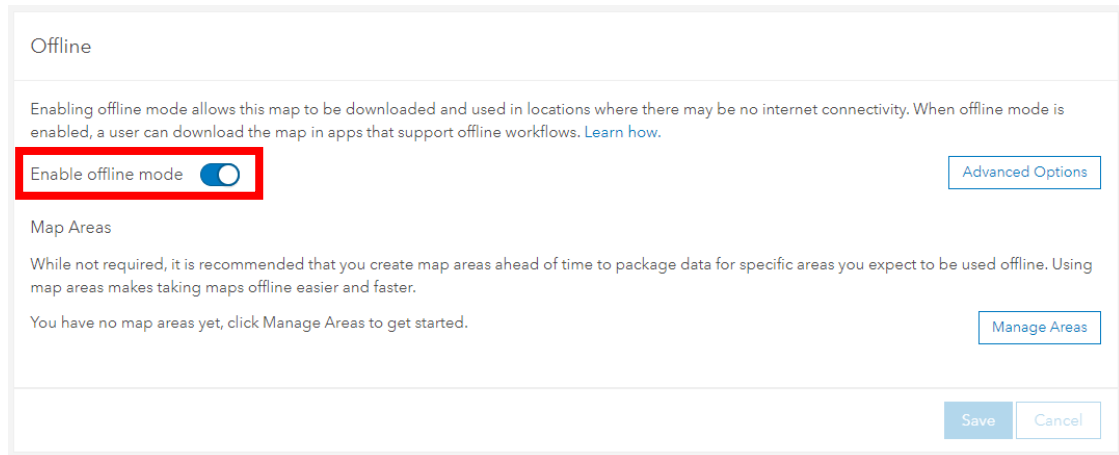
12. Once all Web Map Layers are configured, return to the *Map* pane. In the *Map* tab, click the ‘Analyse’ () button to check for potential errors one final time. If no errors are found, you are ready to publish the map on ArcGIS Online by clicking the ‘Share’ () button.
13. Once the map has been published, you can find the map and the Web Map Layers on ArcGIS Online. Go to <https://www.arcgis.com/index.html> and sign in using instruction 1. Once you have signed in, click the *Content* tab on the ribbon at the top of the screen. On the *My Content* page, you will see your published map and Web Feature Layers.



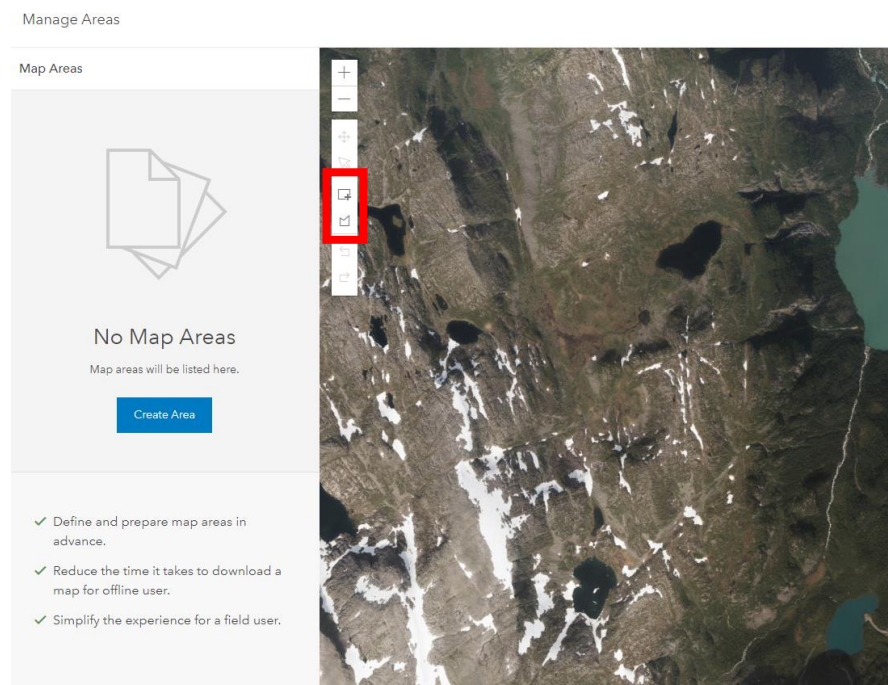
14. We still need to edit some permission on ArcGIS Online in order to use the map out in the field.

Click the Web Map you created; this will take you to the map's overview page. Here you can add further descriptions, see the layers that belong to the map, and have a plethora of viewing options.

Open the *Settings* tab in the top right of the screen. Here you can ensure your map is available to be taken offline by toggling the 'Enable offline mode' toggle on.



You should also create a Map Area to allow your map to be downloaded faster and become less computationally expensive to operate within the ArcGIS Field Maps app. Click the 'Manage Areas' button to open the 'Manage Areas Map'. Here, you can use the rectangle or polygon builder to define the Map Area.



Once you have defined the area, define the level of detail of the downloaded layers using the sliders. Click 'Save' once you have finished, and ArcGIS Online will package your Map Area. Once the Map Area has been packaged, you can close the Manage Areas Map by clicking the



'x' in the top right of the screen. NB: Packaging can take a while; it depends on the size of the datasets being packaged.

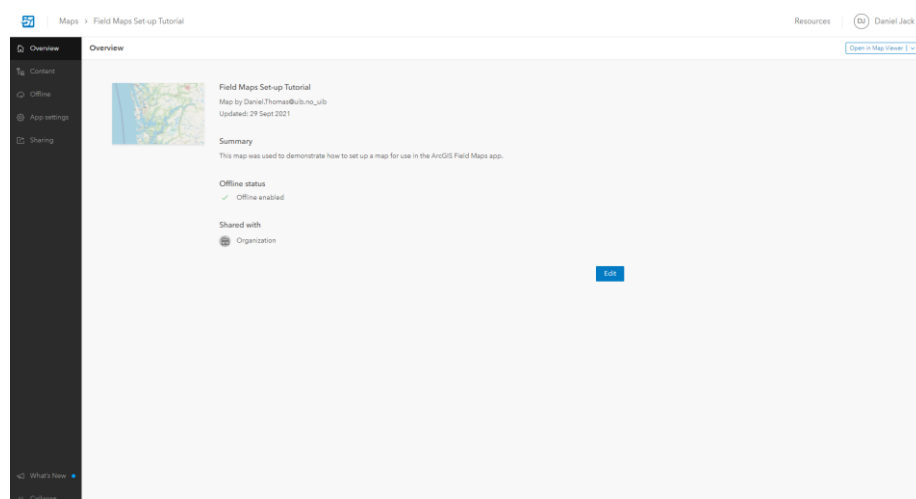
15. Return to the *My Content* page and open the Web Tile Layer (_WTL) overview by clicking on the 'Tile Layer (hosted)' file. Open the *Settings* tab. Scroll down to the 'Tile Layer' group. If you selected to build your tiles manually, click the 'Build Tiles' button. The 'Build Tiles Pop-up' will appear on the screen. Check the boxes for each scale you wish to build tiles for, and click 'Create Tiles'. The Pop-up will then state how many tiles you will be building and the storage required for the tiles. Click 'Yes, create tiles' to begin the tile building process. Once finished, return to the *My Content* page.
16. If your map is to be shared with other institutions for data collection, you will need to ensure the Web Feature Layer map is set for public data collection. From the *My Content* tab, open the Web Feature Layer (_WFL) overview by clicking the 'Feature Layer (hosted)' file. Next, open the *Settings* tab in the top right of the webpage. In the 'General' group, under 'Public Data Collection', ensure that the 'Approve this layer to be shared with the public when editing is enabled' tick box is checked. Click 'Save' at the bottom of the group.

Scroll down to the 'Feature Layer (hosted)' group. Ensure that the layer is enabled for editing and sync. You can adjust the permissions you set in ArcGIS Pro here if you wish to. Ensure you click 'Save' at the bottom of the group if you made changes. Return to the *My Content* page.

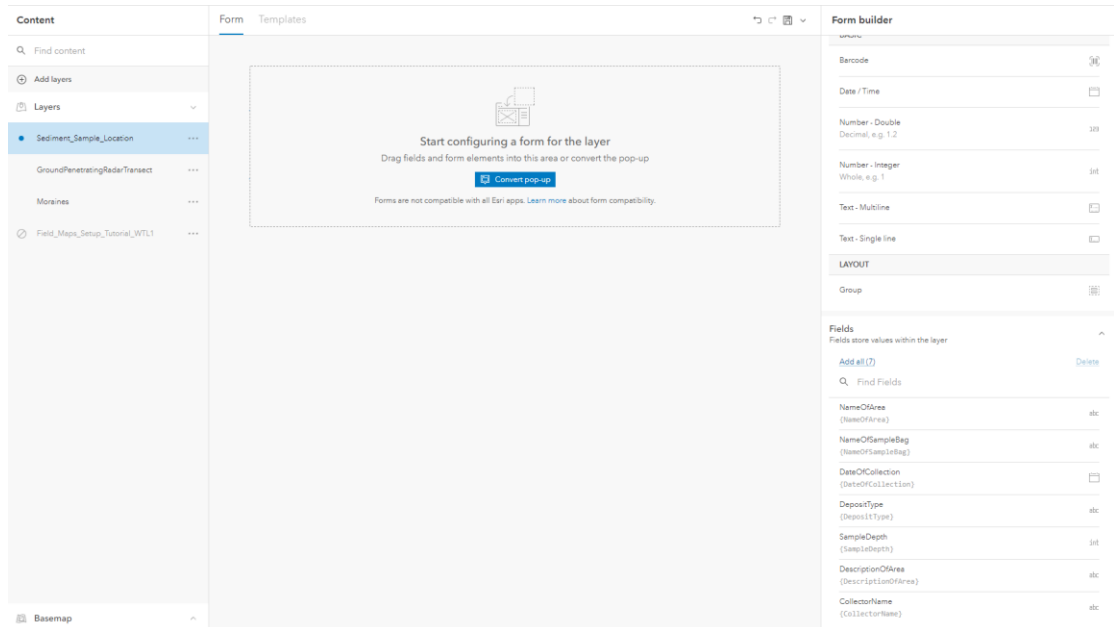
Now your map is ready to be downloaded onto your device and be used in the field!

Before you use your map in the field, you can improve the efficiency of your data collection by setting up **Smart Forms**. Smart Forms allow you to adjust the position of the fields you created for your Feature Classes, suggest what data should be collected for the field, select which fields are available for data input following the input of prior data, and add entirely new fields.

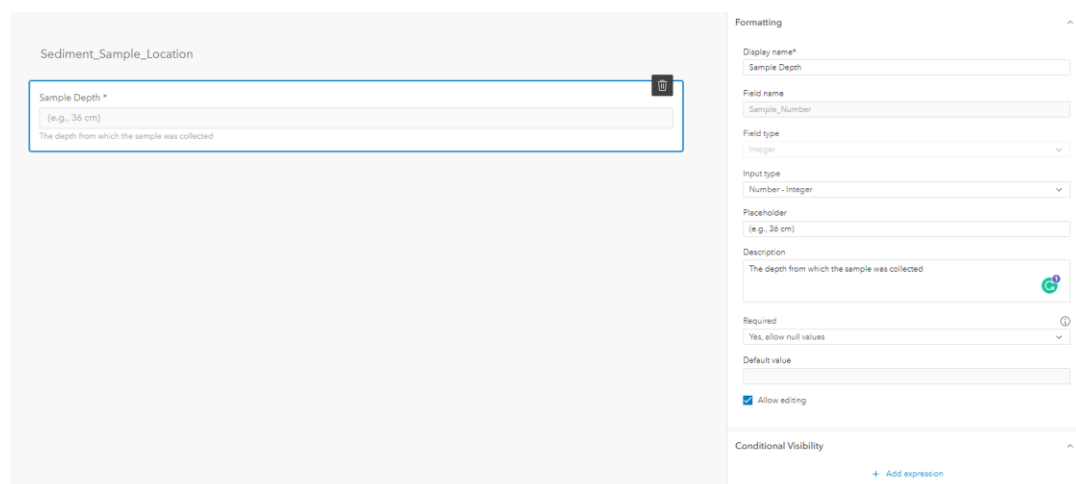
1. On ArcGIS Online, click the **App Selector** () button located in the top left of the screen next to your username, and then click **Field Maps** (). The **Field Maps** tab will open in your browser.
2. Within the **Field Maps** browser tab, underneath the *Maps* tab, click on your Web Map. The **Map Overview** will open.






3. In the pane on the left-hand side of the screen, click the *Content* tab.
4. In the *Content* pane, you will see all the Feature Layers attached to your Web Map. Click on the Feature Layer you wish to create a Smart form for. The *Form* tab and *Form Builder* pane will open.



5. In the *Form Builder* pane, beneath the **Fields** drop-down, you can see the fields you created your feature class in ArcGIS. Beneath the **Form Elements** drop-down, under **BASIC**, you will see the different field types. You can use these field types to add new fields to your Feature Class if, for example, you forgot to add a field before publishing.
6. To add a new field, click and drag the **BASIC** field type into the **Configure Form** box beneath the *Form* tab.
7. Once added, the *Properties* pane will open on the right-hand side of the screen. Once you set the name of the new field, you can adjust the *Input Type*, decide whether the field is required to be filled out, or decide if the field can be edited at all. You can also give the field a description to help students understand what data is expected to be collected for the field. The placeholder can display an example of the expected data format in the field box.



8. Once you've added the new field, click the **Save** button located at the top of the *Form* tab (). Then, close the *Properties* pane by clicking the close () button in the top right of the pane.
9. Beneath the **Fields** drop-down are the fields you created in ArcGIS Pro. These fields can be added to the Smart Form by dragging and dropping the fields into the **Configure Form** box.
10. Once the Smart Form is complete, click the **Save** button at the top of the *Form* tab (). Then, repeat the process for each of your Feature Classes. Your Smart Forms are now ready for use in the field. You can learn more about Smart Forms in this [YouTube video](#): a small walkthrough showing you the Smart Form creation process begins at the 17:35 time stamp.