

# Introduction to ArcGIS Online – Part 1

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Please fill out tutorial evaluation: <http://rcs.bu.edu/eval>

**BOSTON**  
UNIVERSITY

# Housekeeping

- My assistant: Yun Shen
- This session is recorded.
- Will be published here:

<https://drive.google.com/drive/folders/12xGX0drv0X60oetm5L6UFFg6GQ4-cqqL>

## Link to Presentation:

[http://rcs.bu.edu/examples/gis/arcgis\\_online/intro\\_to\\_arcgis\\_online.pdf](http://rcs.bu.edu/examples/gis/arcgis_online/intro_to_arcgis_online.pdf)

# Outline

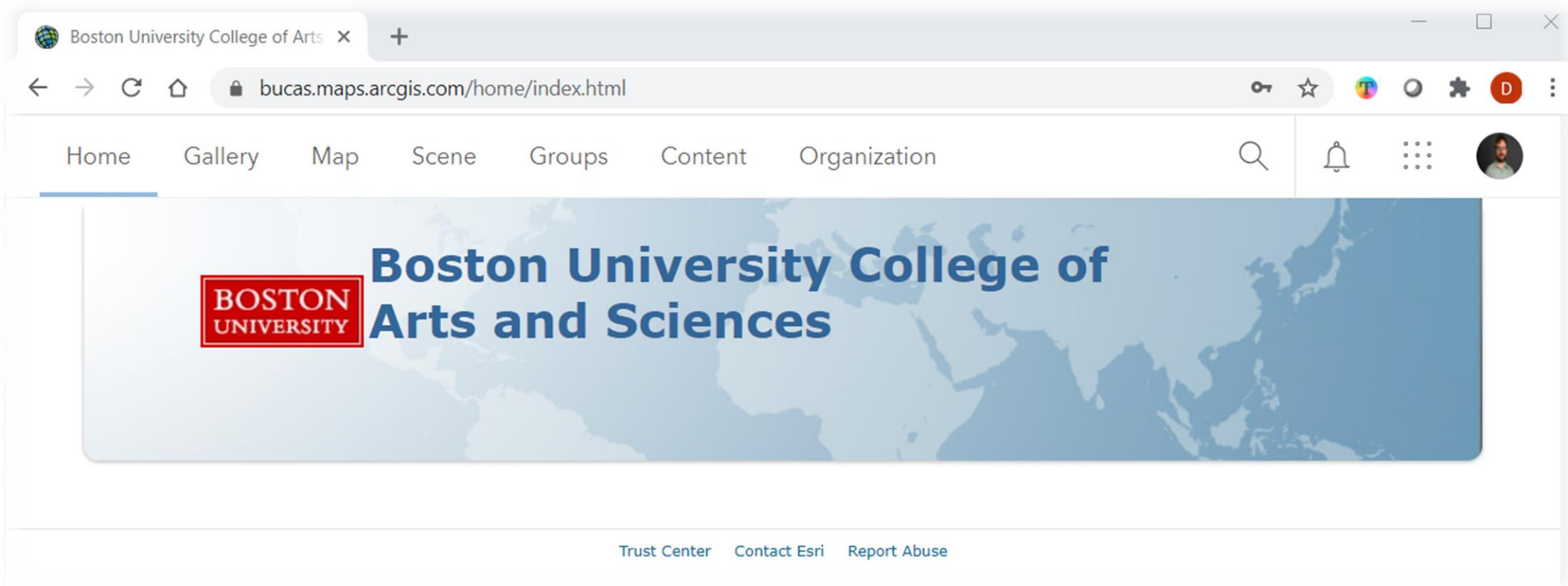
- **Part 1**
  - **ArcGIS Online –What is it?**
  - **Brief GIS Theory Lesson**
  - **Explore ArcGIS Online Portal**
  - **Explore a Map**
  - **General Workflow:**
    - **Step 1 – Find Layers**
    - **Step 2 – Create Web Map**
  
- **Part 2**
  - **Review Part 1**
  - **Step 3 – Create an application**
  - **Step 4 - Permissions**

# ArcGIS Online – What is it?



# ArcGIS Online – What is it?

- Cloud Platform



# ArcGIS Online – What is it?

- Share data and maps with others

Gallery for Boston University College of Arts and Sciences

Search gallery

Grid Relevance Filter

Item Type

- Maps
- Layers
- Scenes
- Apps
- Tools
- Files
- Notebooks

> Location

> Date Modified

> Tags

> Status

**MA Town Boundary**  
Municipal Boundaries from Census 2010 as a line feature class.

**PM25\_Annual\_Average\_2015...**  
PM2.5 Air Quality Annual Average in 2015 at Census Tract

**Vulnerability in Massachusetts ...**  
This mapping tool was created to show differences in vulnerability in Massachusetts communities durin

**Chelsea Summer 2017 Photo ...**  
Click Guest or sign into Twitter. There are 4 questions for each survey, but only the first 3 are required. If you

**Finding Carrots: Food resourc...**  
This is a map showing different food

**Lusaka District Boundaries 20...**  
This layer shows the District level


**EOTMAJROADS\_ARC**  
The official state-maintained major

**Congregate Meal Program**  
Congregate Meal program member

# ArcGIS Online – What is it?

- Create **Groups** to collaborate or share data with specific audience

## Landsat Community



This is a group curated by Esri for sharing maps and applications created using Landsat imagery. These items access World-wide dynamic image services consisting of Landsat 8, as well as GLS Data created using scenes from Landsat 1 through Landsat 7.

owned by **esri**

### Description


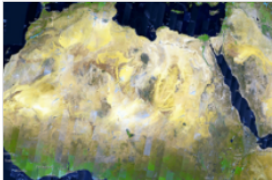
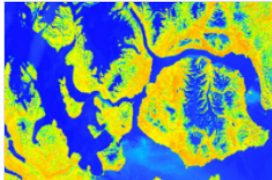
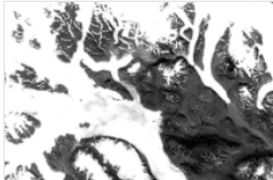
Global Land Survey (GLS) datasets are created by the U.S. Geological Survey (USGS) and the National Aeronautics and Space Administration (NASA) using Landsat images. These global minimal cloud cover, orthorectified Landsat data products support global assessments of land cover, land cover change, and ecosystem dynamics such as disturbance and vegetation health. Landsat represents the world's longest continuously acquired collection of space-based moderate-resolution land remote sensing data change research.

Esri provides a series of Landsat Image Services as dynamic image services allowing customers to explore the important information within this imagery. This includes band combination analysis for visualization (such as Natural Color, Infrared, Vegetative Change, **NDVI**) as well as many years of imagery to look at changes over time (1975, 1990, 2000, 2005, 2010).

Members of the Landsat Global Land Survey group have used this imagery in maps and applications to tell stories about how earth is changing over time.

### Recently added content

[View All Group Content](#)

 <p><b>Landsat Explorer App</b> by Esri Created: Jan 9, 2018 Updated: Jun 1, 2020 View Count: 5,458</p>	 <p><b>Landsat 8 Views</b> by Esri Created: Dec 6, 2013 Updated: Dec 19, 2019 View Count: 179,055</p>	 <p><b>Landsat Arctic Imagery: NDSI...</b> by esri Created: Jun 23, 2016 Updated: Dec 19, 2019 View Count: 1,010</p>	 <p><b>Landsat Arctic Imagery: Panc...</b> by esri Created: Jun 23, 2016 Updated: Dec 19, 2019 View Count: 371</p>
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Additional Reading:

<https://doc.arcgis.com/en/arcgis-online/share-maps/share-content-with-collaboration-participants.htm>

# ArcGIS Online – What is it?

- Import Data and Explore Data in **Web Map**.

The screenshot shows the ArcGIS Online web map interface. The browser address bar indicates the URL: `bucas.maps.arcgis.com/home/webmap/viewer.html?webmap=bf4e47de248d4cc6b77e02e0b0335b69`. The map displays a choropleth-style data layer over the United States, with a focus on the western region. A pop-up window titled "Presque Isle" is open, displaying the following data:

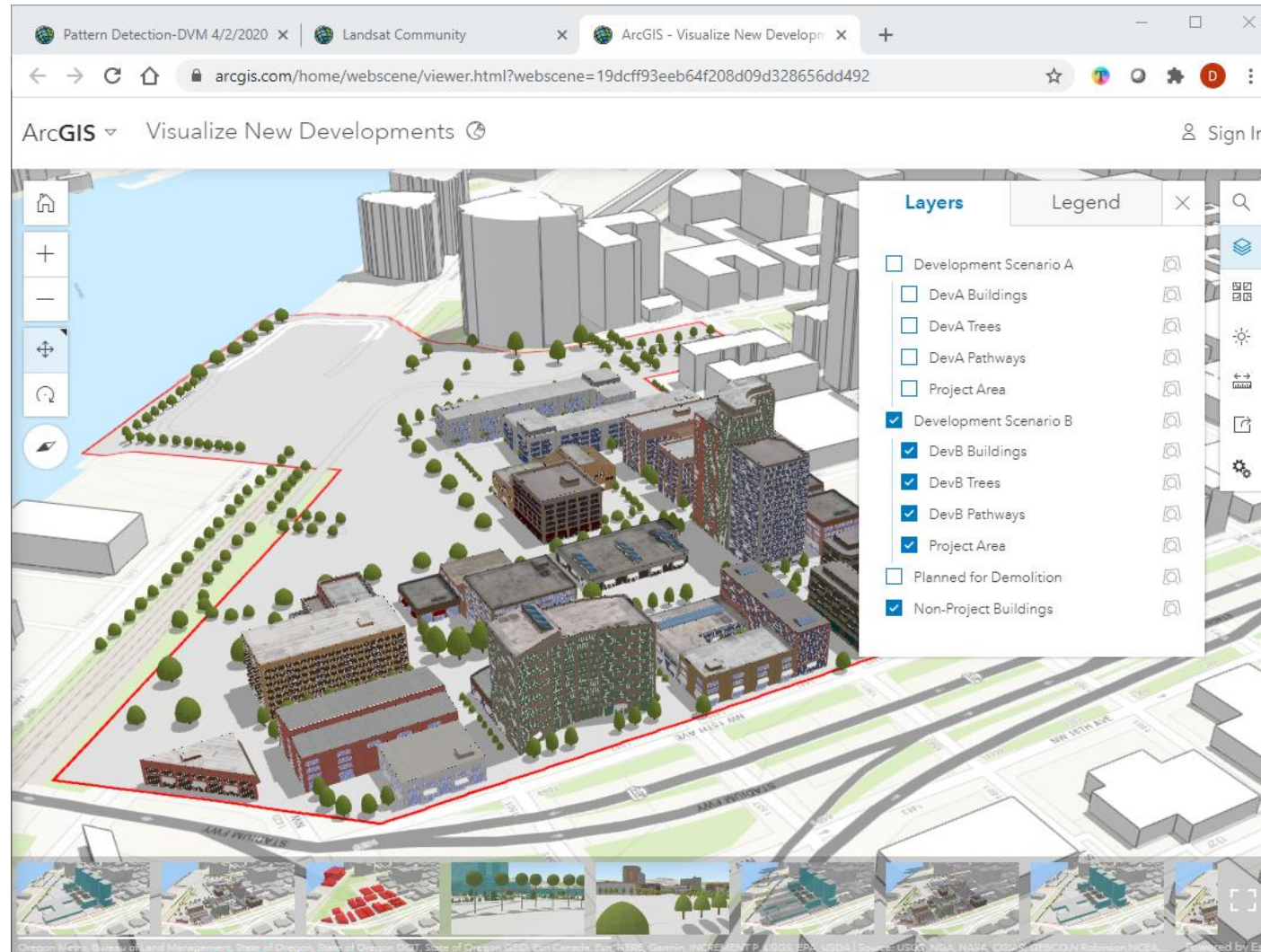
Presque Isle	
OBJECTID	2317
NAME	Presque Isle
COUNTY_KEY	26141
CountyID	26141
Participants	1465
SNAPRate	0.10952452153110048
SNAPPop%	10.95245215311
Shape__Area	13489299559.484375
Shape__Length	517062.0385410141

At the bottom of the pop-up window, there are two links: [Zoom to](#) and [Get Directions](#).



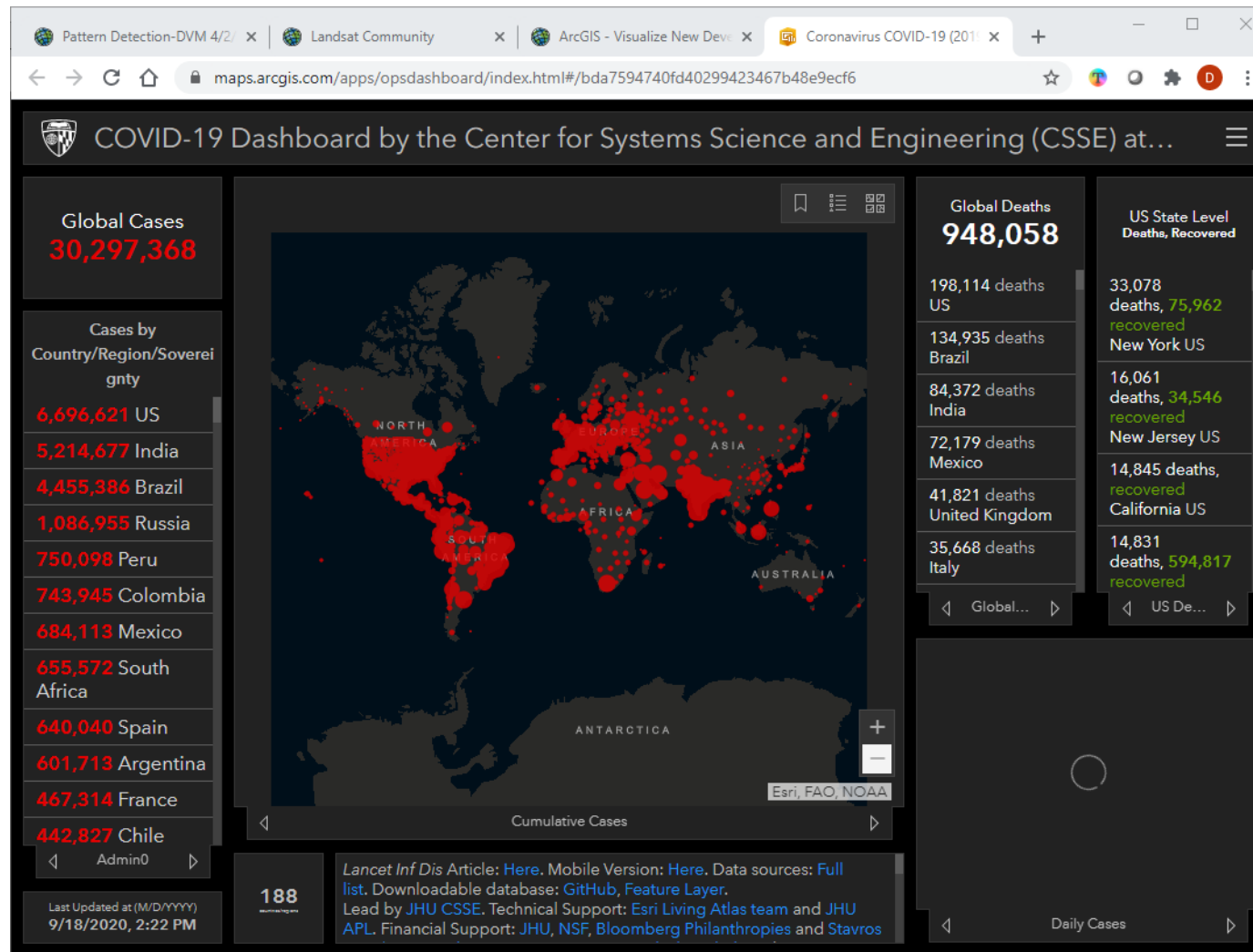
# ArcGIS Online – What is it?

- Show data in 3D using **Scenes**



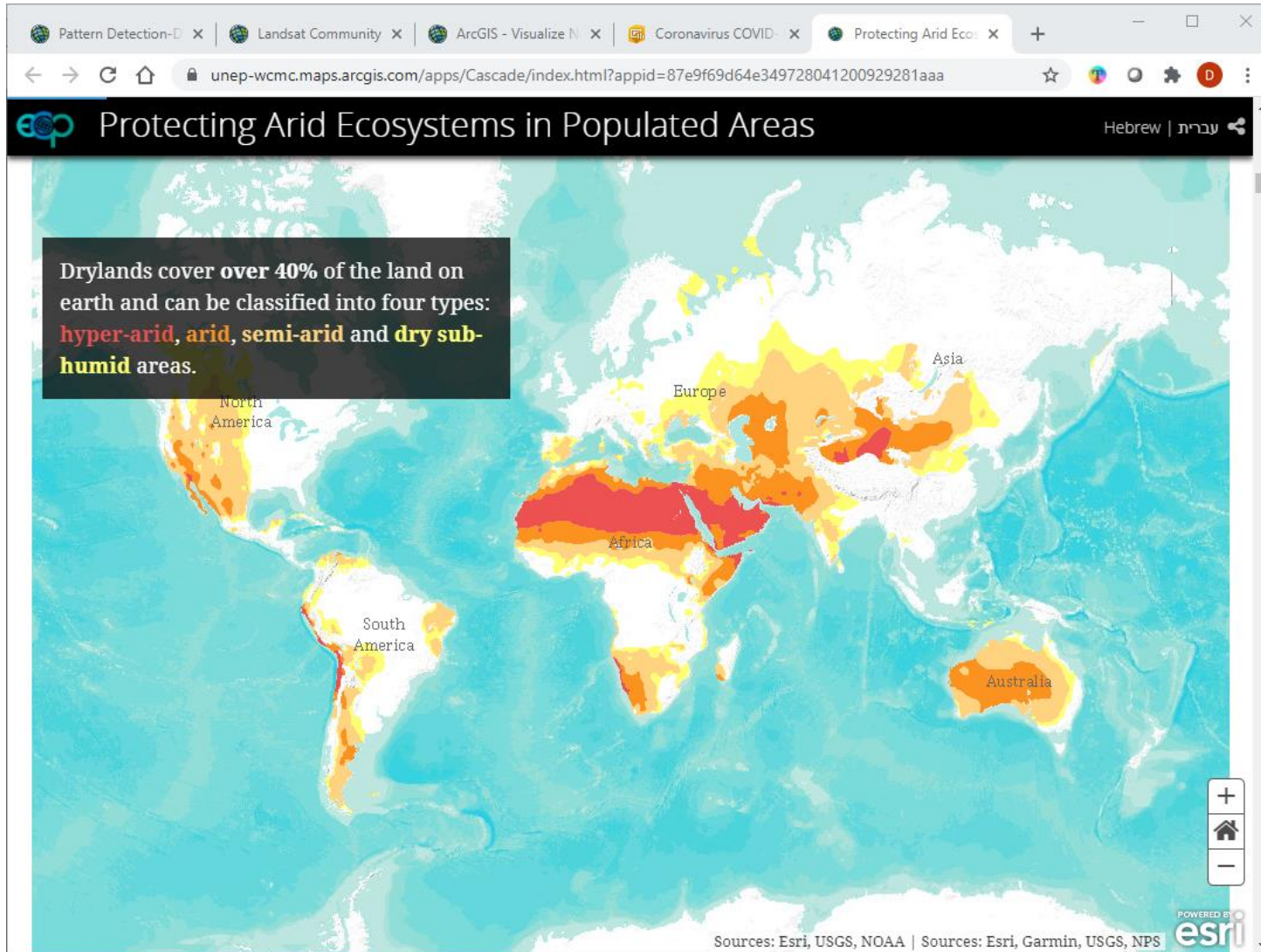
# ArcGIS Online – What is it?

Create Applications (Apps) to share your findings.



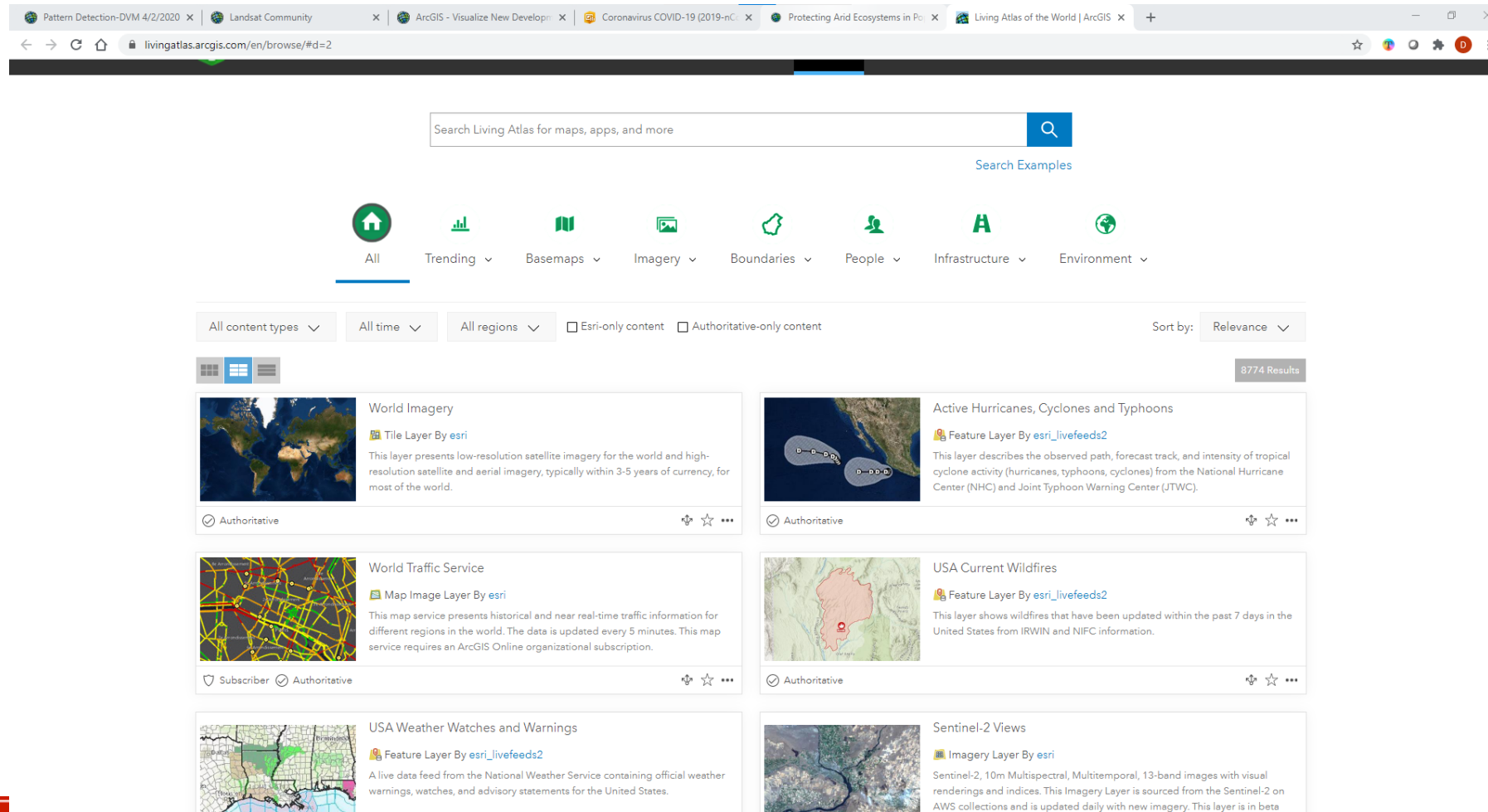
# ArcGIS Online – What is it?

Create **Story Maps**.



# ArcGIS Online – What is it?

## Searching Living Atlas



Search Living Atlas for maps, apps, and more

Search Examples

All Trending Basemaps Imagery Boundaries People Infrastructure Environment

All content types All time All regions  Esri-only content  Authoritative-only content Sort by: Relevance

8774 Results

- World Imagery**  
Tile Layer By esri  
This layer presents low-resolution satellite imagery for the world and high-resolution satellite and aerial imagery, typically within 3-5 years of currency, for most of the world.  
Authoritative
- Active Hurricanes, Cyclones and Typhoons**  
Feature Layer By esri\_livefeeds2  
This layer describes the observed path, forecast track, and intensity of tropical cyclone activity (hurricanes, typhoons, cyclones) from the National Hurricane Center (NHC) and Joint Typhoon Warning Center (JTWC).  
Authoritative
- World Traffic Service**  
Map Image Layer By esri  
This map service presents historical and near real-time traffic information for different regions in the world. The data is updated every 5 minutes. This map service requires an ArcGIS Online organizational subscription.  
Subscriber Authoritative
- USA Current Wildfires**  
Feature Layer By esri\_livefeeds2  
This layer shows wildfires that have been updated within the past 7 days in the United States from IRWIN and NIFC information.  
Authoritative
- USA Weather Watches and Warnings**  
Feature Layer By esri\_livefeeds2  
A live data feed from the National Weather Service containing official weather warnings, watches, and advisory statements for the United States.  
Authoritative
- Sentinel-2 Views**  
Imagery Layer By esri  
Sentinel-2, 10m Multispectral, Multitemporal, 13-band images with visual renderings and indices. This Imagery Layer is sourced from the Sentinel-2 on AWS collections and is updated daily with new imagery. This layer is in beta.

# ArcGIS Online – What is it?

Lesson Gallery

<https://learn.arcgis.com/en/gallery/>

Story Map Gallery:

<https://storymaps-classic.arcgis.com/en/gallery/#s=0>

# ArcGIS Online – What is it?

- Cloud Platform
- Create and share maps
- Create interactive map applications
- Paid service
  
- Paid by CAS IT
- Certain processes consume “credits”

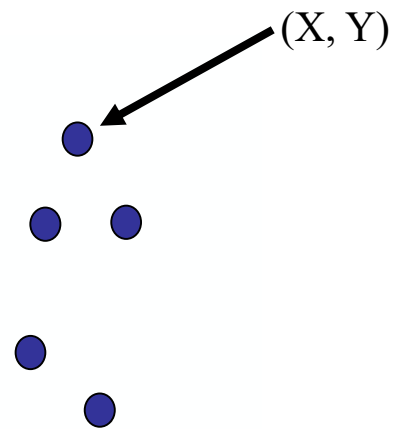
Credits by capability:

[https://doc.arcgis.com/en/arcgis-online/administer/credits.htm#ESRI\\_SECTION1\\_709121D2C7694DCAB9B8592F36F7A5BA](https://doc.arcgis.com/en/arcgis-online/administer/credits.htm#ESRI_SECTION1_709121D2C7694DCAB9B8592F36F7A5BA)

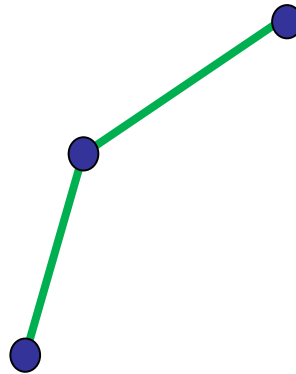
# Brief GIS Theory Lesson

# Brief GIS Theory Lesson

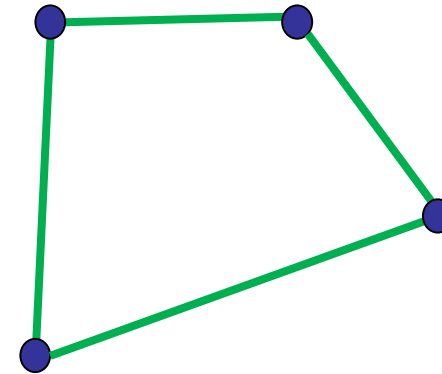
## Vector Data



Points



Polylines

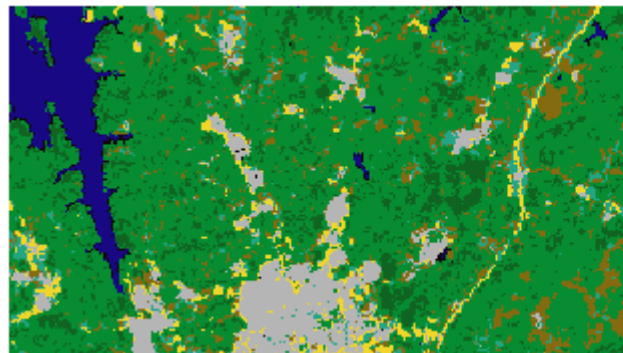
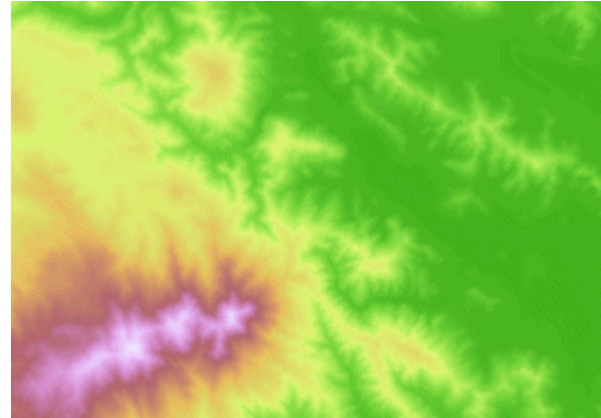
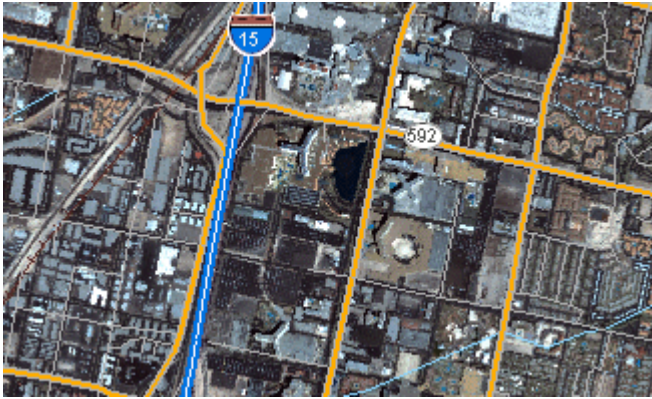


Polygon



# Brief GIS Theory Lesson

## Raster Data



- |  |   |
|--|---|
|  Agriculture              |  Grass           |
|  Bare ground              |  Pine            |
|  Water                    |  Shadow          |
|  Deciduous                |  Urban/Developed |
|  Deciduous/<br>Pine mixed |   |

# Brief GIS Theory Lesson

ArcGIS Online Term	Description
Feature Layer	Grouping of features ( <b>Vector</b> )
Tile Layers	Web Optimized tile data showing <b>vector</b> or <b>raster</b> data
Map Image Layers	<b>Vector</b> data in images tiles
Imagery Layers	<b>Raster</b> Layer
Scene Layers	Collection of 3D Features ( <b>Vector</b> )
Tables	Table of rows and columns (no spatial component)
Elevation Layer	Elevation data in image tiles. ( <b>Raster</b> )

Note: Layers contains symbology and visualization settings, the data itself is stored separately on the server. This allows you to have multiple layers, but use the same underlying data.



Learn more:

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

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

# Brief GIS Theory Lesson

- ArcGIS Limited to:
  - Geographic Coordinate System – WGS 1984
  - Projection – WGS 1984 Web Mercator

Country	Area ( mi ^2)
Africa	11,730,000
Greenland	836,300

[How does ArcGIS Online measure distance?](#)



# Additional Resources



# Additional Resources

Get Started: <https://doc.arcgis.com/en/arcgis-online/get-started/get-started.htm>

Get Started With Map Viewer : <https://learn.arcgis.com/en/projects/get-started-with-map-viewer/arcgis-online/>

Try ArcGIS Online: <https://learn.arcgis.com/en/paths/try-arcgis-online/>

Lesson Gallery: <https://learn.arcgis.com/en/gallery/>

Developers: <https://developers.arcgis.com/labs/?product=any&topic=any>

Map Viewer Beta: <https://www.esri.com/arcgis-blog/products/arcgis-online/mapping/try-out-the-new-map-viewer-beta/>

## Creating Apps

- Use existing Templates  
<https://www.arcgis.com/home/group.html?id=2f0ec8cb03574128bd673cefab106f39#overview>
- Customize your own application –(Programming skills needed)
  - html, css, javascript  
<https://developers.arcgis.com/labs/?product=any&topic=any>

# Explore ArcGIS Online Portal

<https://bucas.maps.arcgis.com/>

**Username:** <bu\_username>\_bucas

**Example:** milechin\_bucas

# Explore a Map



# Create a Map

# General Workflow

- **Step 1 – Find Layers**
- **Step 2 - Create Web Map**
- **Step 3 – Create App**
- **Step 4 – Permissions**

# Step 1 – Find Layers


# Step 1 – Find/Upload Layer

- Find existing data shared by others on ArcGIS Online
  - Upload your data to ArcGIS Online (e.g CSV File)
  - Create maps in ArcGIS Pro and upload it to ArcGIS Online
- 
- In general, the data needs to be either already available in ArcGIS Online platform or you need to upload data to it.

# Step 1 – Find Layers

## Feature Layer

The screenshot shows the ArcGIS Online search interface. The search bar contains the text "boston subway\_W". The results are displayed in a table view. The table has a header row with columns for "Title" and "Modified". The first row of data shows a search result for "Boston Subway\_WFL1", which is a "Feature Layer (hosted)" and was modified on "Feb 5, 2020".

<input type="checkbox"/>	Title	Modified
<input type="checkbox"/>	 Boston Subway_WFL1	Feb 5, 2020

Let's find some layers.

## Step 2 – Create Web Map

# Step 2 – Create Web Map

- Import Layer into Web Map





The screenshot displays the ArcGIS Online interface for a web map titled "My Map". The map shows the Boston area with several subway lines overlaid in different colors: red, blue, green, and orange. The interface includes a top navigation bar with "Home" and "My Map" options, and a user profile for "Dennis". Below the navigation bar are icons for "Details", "Add", "Basemap", and "Analysis". A search bar is present with the placeholder text "Find address or place". On the left side, there is a "Contents" panel with three checked layers: "Boston Subway WFL1 - mbta stations XYTableToPoint", "Boston Subway WFL1 - MBTA ARC", and "Boston Subway WFL1 - OUTLINE25K POLY". A "Topographic" layer is also visible but unchecked. The map itself shows various Boston neighborhoods and landmarks, with a scale bar at the bottom left and the Esri logo at the bottom right.



# Step 2 – Create Web Map

- **Saved Web Map**

The screenshot shows the ArcGIS Online interface with the search bar containing 'boston'. The search results are displayed in a table view, sorted by 'Date Modified'. The first result, 'Boston Subway', is highlighted with a red box. It is a 'Web Map' created on 'Sep 21, 2020'. The second result is 'Boston Subway\_WFL1', a 'Feature Layer (hosted)' created on 'Feb 5, 2020'.

<input type="checkbox"/>	Title			Modified
<input type="checkbox"/>	 Boston Subway	Web Map		☆ ... Sep 21, 2020
<input type="checkbox"/>	 Boston Subway_WFL1	Feature Layer (hosted)		☆ ... Feb 5, 2020

Let's create a map.

# Next Challenge

<https://learn.arcgis.com/en/projects/analyze-volcano-shelter-access-in-hawaii/>

# Questions

Please fill out tutorial evaluation:

<http://rcs.bu.edu/eval>

Email me at:

[help@scc.bu.edu](mailto:help@scc.bu.edu)