

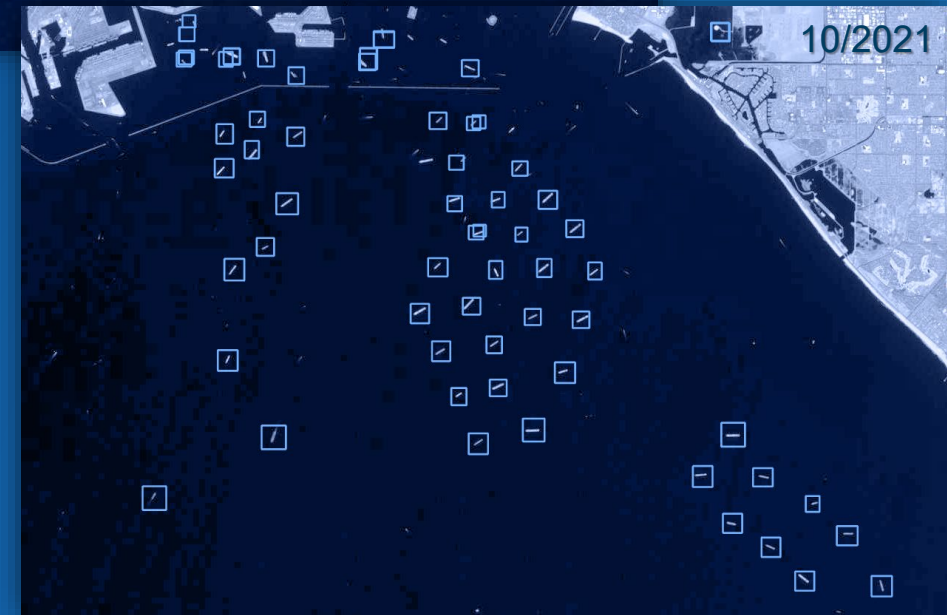
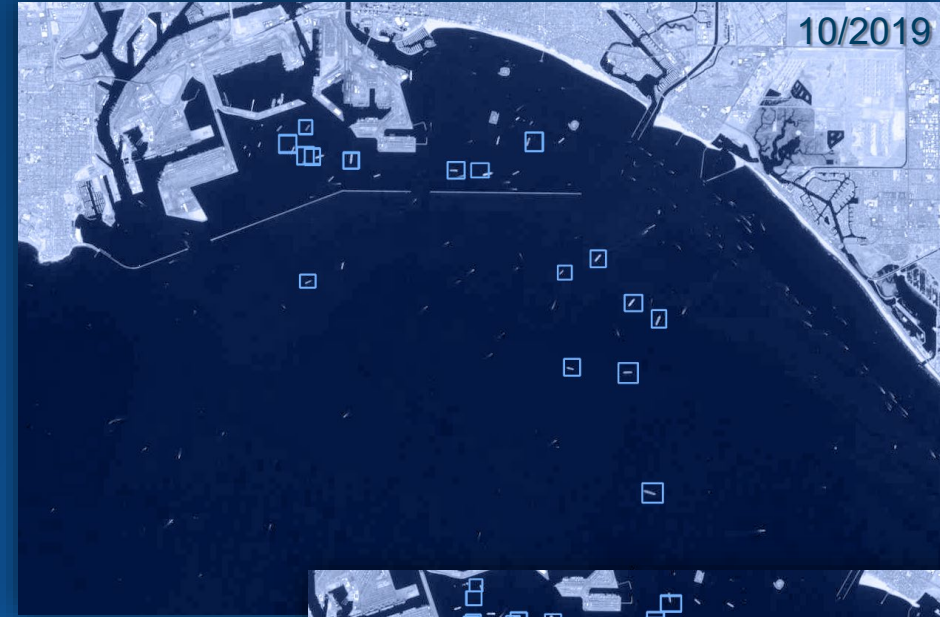
# From Ridges to Reefs:

*Exploring the Interconnectivity of SDGs 14 & 15 through Geography*

Eric Wagner, GISP  
Product Engineer, Esri

# The Presentation Ahead

- Introduction
- What is GIS?
- Demos
  - Watershed land cover calculations and downstream flow
  - Identifying and monitoring ships at anchor
- Learning Tutorials and Resources

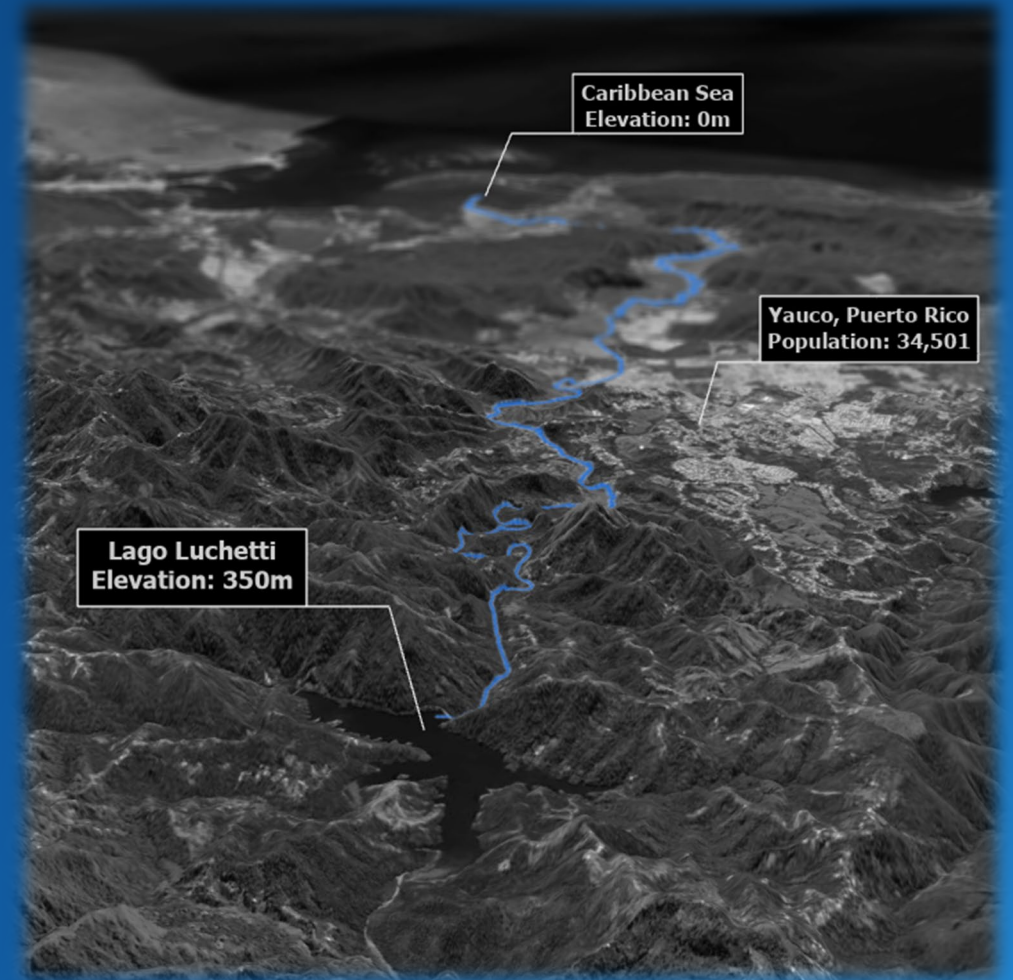




# Downhill from Here

What happens on land ends up in the ocean

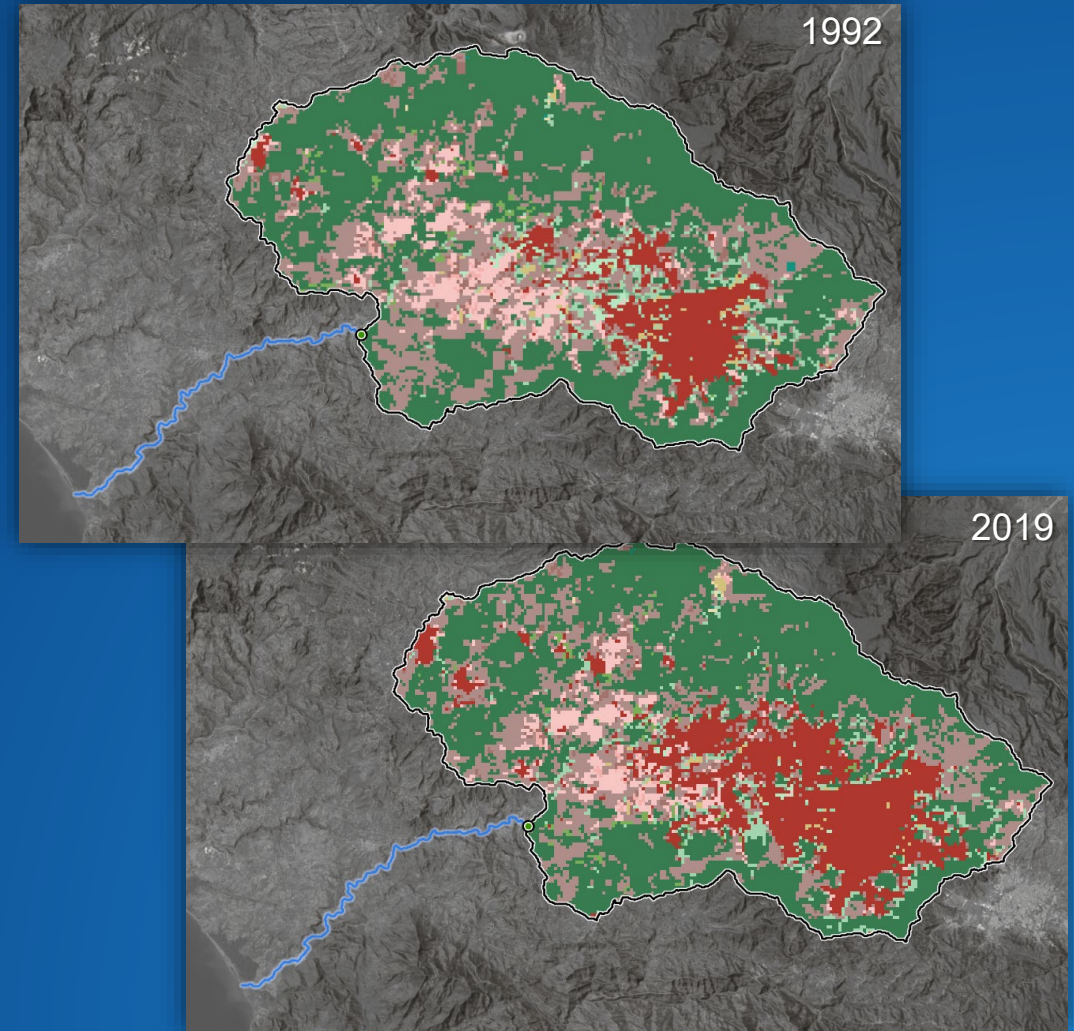
- Land and ocean environments are intricately connected
- Grasping the scale of natural and anthropogenic trends on the terrestrial environment help to understand the impacts we have on our aquatic and marine environments
- Can be quantified and studied through a geographic lens



# Where? Geographic Information Systems

More than just a map

- GIS primarily asks “*Where?*”
- A means by which we can understand trends and patterns across geographic space, *from the smallest village to the entire globe*
- When you know the location of features or phenomena of interest, you gain an understand not found in traditional charts, tables, and graphs for visualization
- Allows us to ask “*Why?*” or “*When?*”



# Where? Geographic Information Systems

More than a map. More than SDGs 14 and 15.

- Examples of where GIS is used:

- Resource distribution (food, medical supplies, bed nets, etc.)
- Disaster response
- Land and ocean animal tracking
- Household surveys/censuses
- Land cover change
- Disease vector control
- Illegal mining detection
- Demining operations
- Watershed mapping
- Forestation and deforestation
- Flood zone mapping
- Property ownership
- Agricultural output estimation
- Access to food and water
- Urban planning
- Solar/wind energy potential
- Disease spread
- Governments sharing data publicly
- Racial inequality
- Invasive species management



# The ArcGIS System

Mapping and analyzing our world

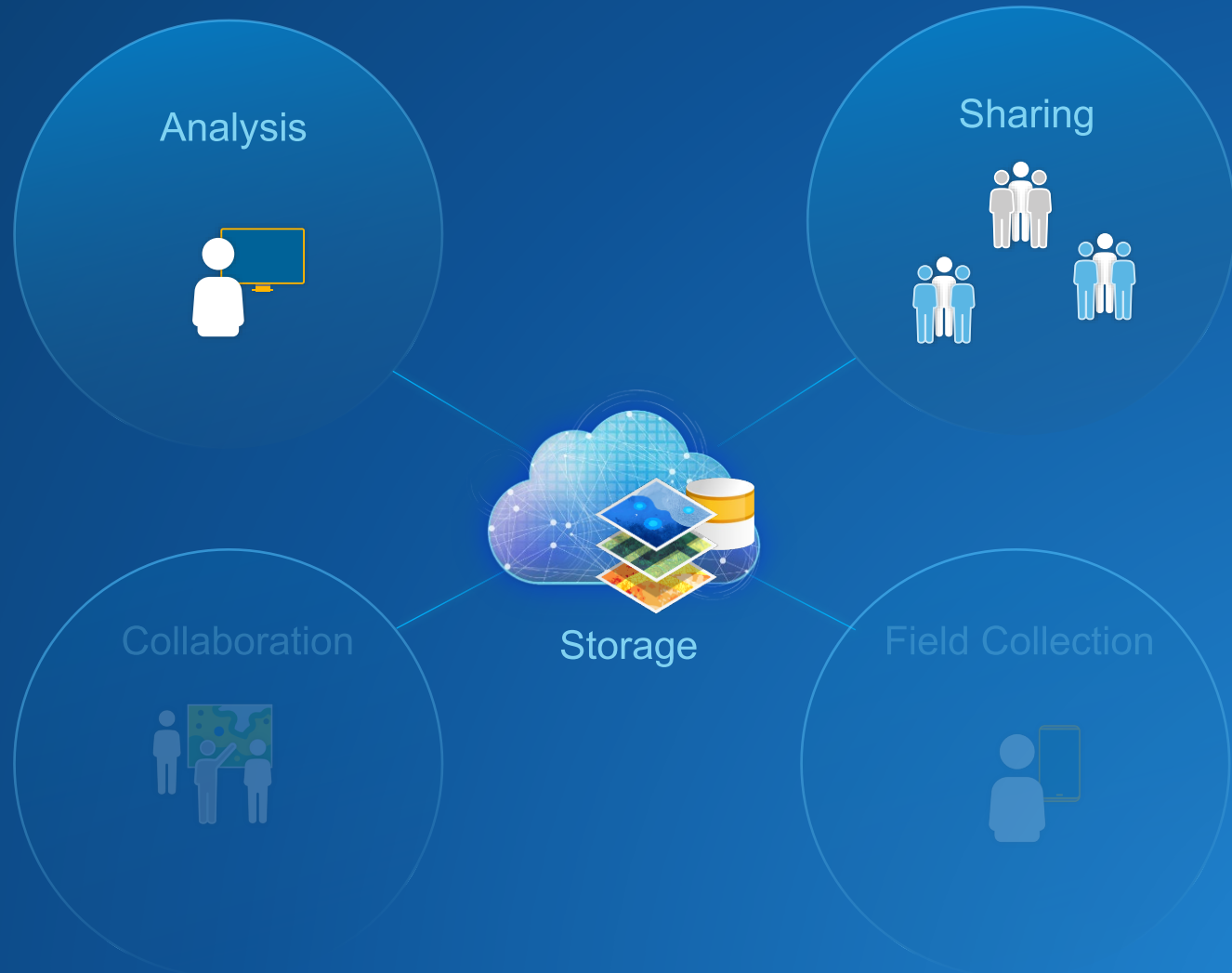
- Apps that allow for:
  - Field data collection
  - Collaboration
  - Analysis
  - Public Sharing



# The ArcGIS System

Mapping and analyzing our world

- Apps that allow for:
  - Field data collection
  - Collaboration
  - Analysis
  - Public Sharing



# Demo: Urbanizing Watersheds

San José, Costa Rica

San José, Costa Rica  
84.9001661°W  
10.1320810°N





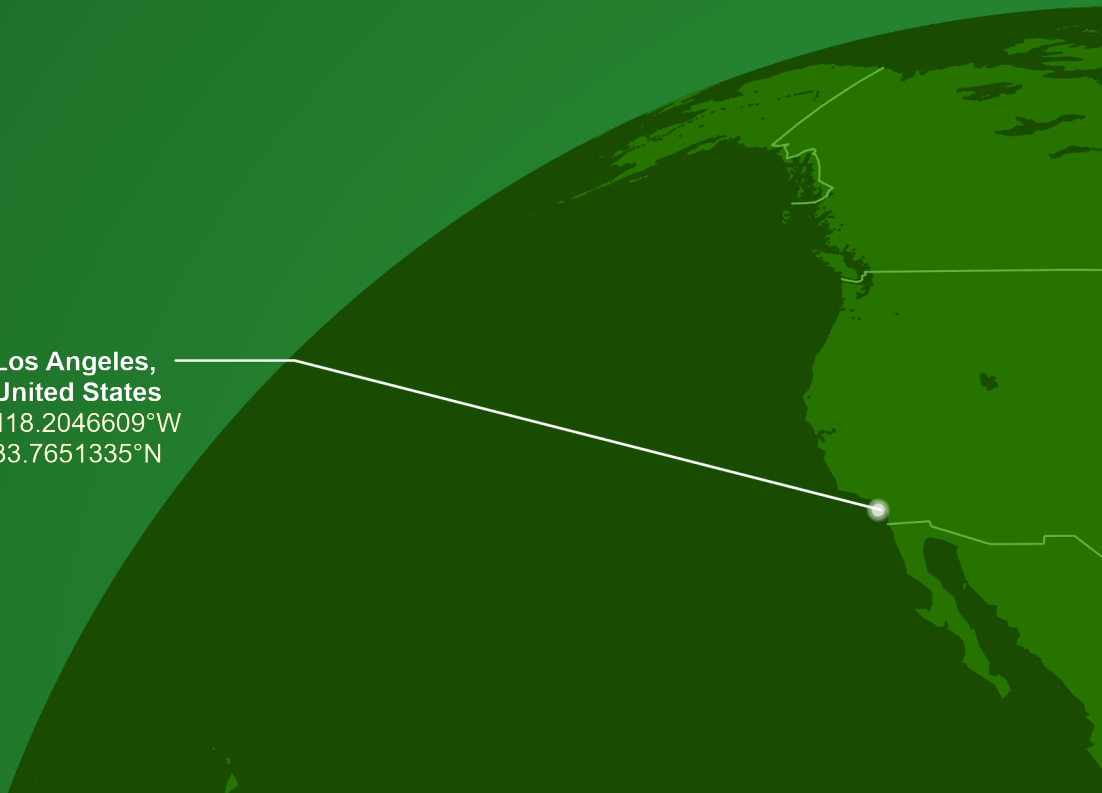
# Urbanizing Watersheds

- As a watershed urbanizes, water quality is impacted
- How to delineate a watershed
- Trace the downstream flow path
- Calculate the change of land cover
- Explore offshore biodiversity

# Demo: Congested Ports

Los Angeles, United States

Los Angeles,  
United States  
118.2046609°W  
33.7651335°N



# Congested Ports

- Historically ships could quickly dock and unload cargo
- Due to logistics and covid, delays occur and these ships remain anchored offshore for days
- Use deep learning to detect ship locations over time from satellite imagery
- Use ship tracking data to see how long a ship has been in one location
- Share data through web apps



# Where? Geographic Information Systems

More than a map. More than SDGs 14 and 15.

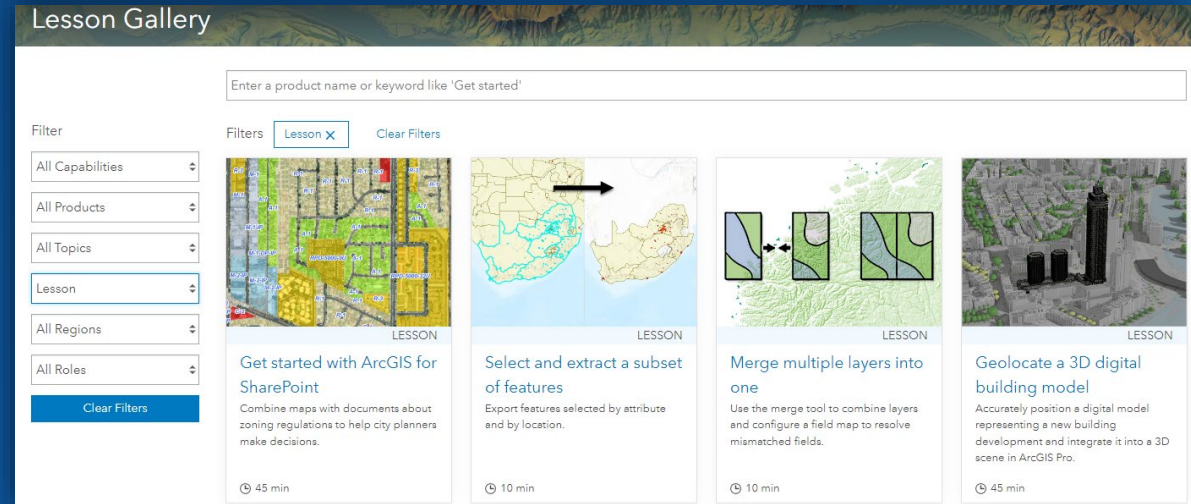
- Examples of where GIS is used:

- Resource distribution (food, medical supplies, bed nets, etc.)
- Disaster response
- Land and ocean animal tracking
- Household surveys/censuses
- Land cover change
- Disease vector control
- Illegal mining detection
- Demining operations
- Watershed mapping
- Forestation and deforestation
- Flood zone mapping
- Property ownership
- Agricultural output estimation
- Access to food and water
- Urban planning
- Solar/wind energy potential
- Disease spread
- Governments sharing data publicly
- Racial inequality
- Invasive species management

# Learning Tutorials & Resources

For users of all experience levels

- [Esri Academy](#) – Tutorials and videos
- [Learn ArcGIS](#) – over 300 real world scenarios
- [ArcGIS Blogs](#) – Learn from the pros



Lesson Gallery

Enter a product name or keyword like 'Get started'

Filter: Lesson X Clear Filters

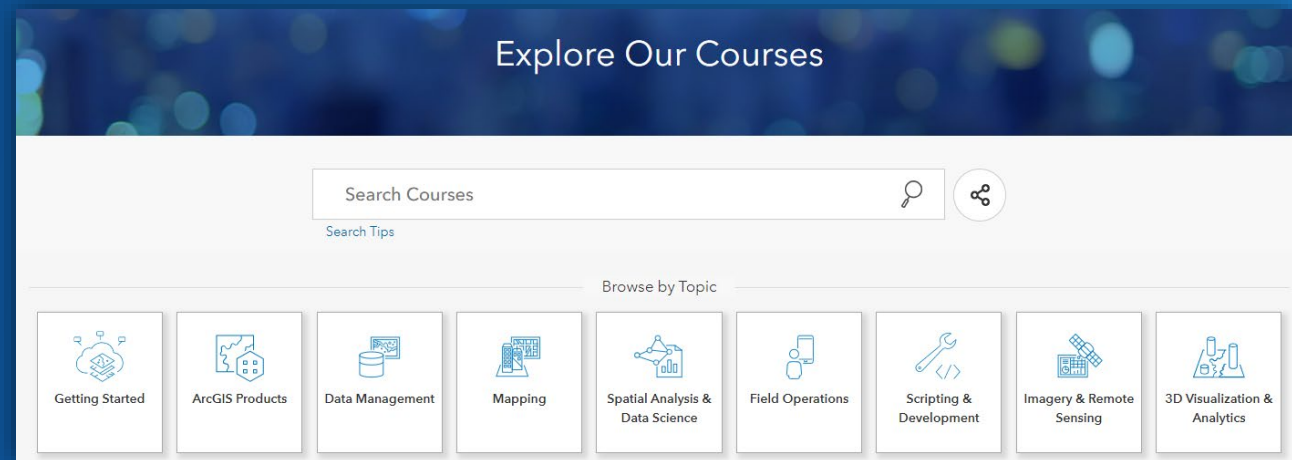
All Capabilities All Products All Topics Lesson All Regions All Roles Clear Filters

Get started with ArcGIS for SharePoint  
Combine maps with documents about zoning regulations to help city planners make decisions.  
45 min

Select and extract a subset of features  
Export features selected by attribute and by location.  
10 min

Merge multiple layers into one  
Use the merge tool to combine layers and configure a field map to resolve mismatched fields.  
10 min

Geolocate a 3D digital building model  
Accurately position a digital model representing a new building development and integrate it into a 3D scene in ArcGIS Pro.  
45 min



Explore Our Courses

Search Courses Search Tips

Browse by Topic

- Getting Started
- ArcGIS Products
- Data Management
- Mapping
- Spatial Analysis & Data Science
- Field Operations
- Scripting & Development
- Imagery & Remote Sensing
- 3D Visualization & Analytics

# Thank You!



Eric Wagner | [ewagner@esri.com](mailto:ewagner@esri.com)