Living Atlas: Road Ahead

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Workshop Agenda

Subhead Here

- Overview of the Living Atlas
- Esri Content Portfolio
  - Overview
  - Road Map for 2017 and Beyond
  - Demos: Previews of Online Content
- Questions & Answers
  - Suggestions for New Content

Overview of the Living Atlas

ArcGIS includes a Living Atlas of the World

Maps and Layers from Esri and Thousands of Contributors

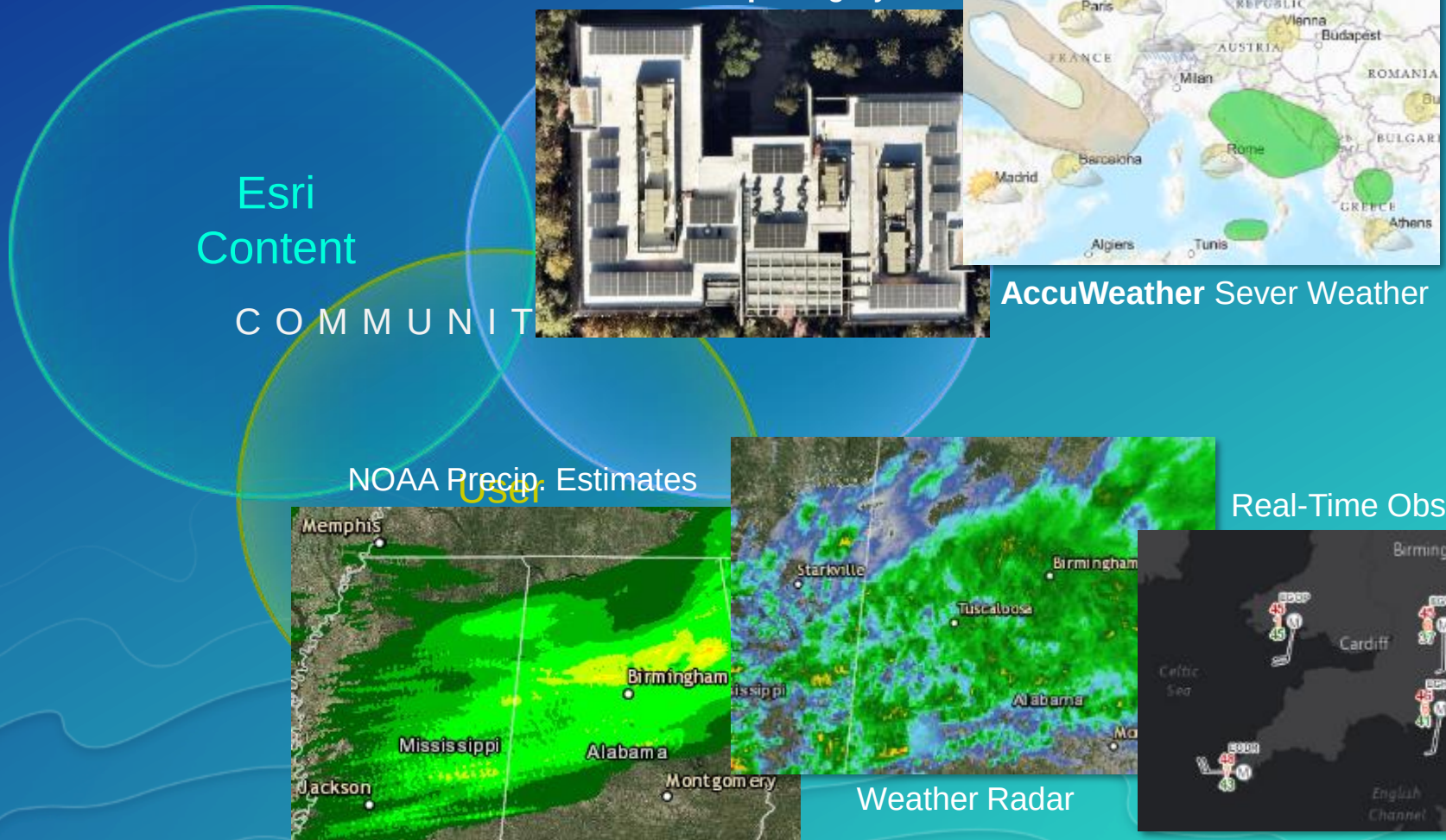
The Collection is growing and changing on a daily basis…

Transportation
Weather
Historical
Landscape
Habitats
Urban Systems
Basemaps
Elevation
Boundaries
Land Cover
Soils
Hazards
Oceans
Imagery
Observations
Hydro
Demographics

…with Curated Content on Many Topics

Content is Published by Esri, Users, and Partners

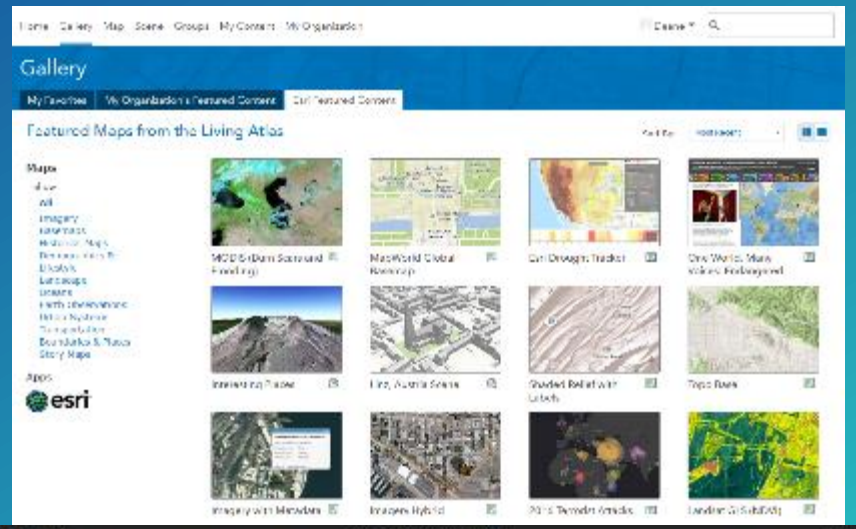
Built by the ArcGIS Community and Curated by Esri

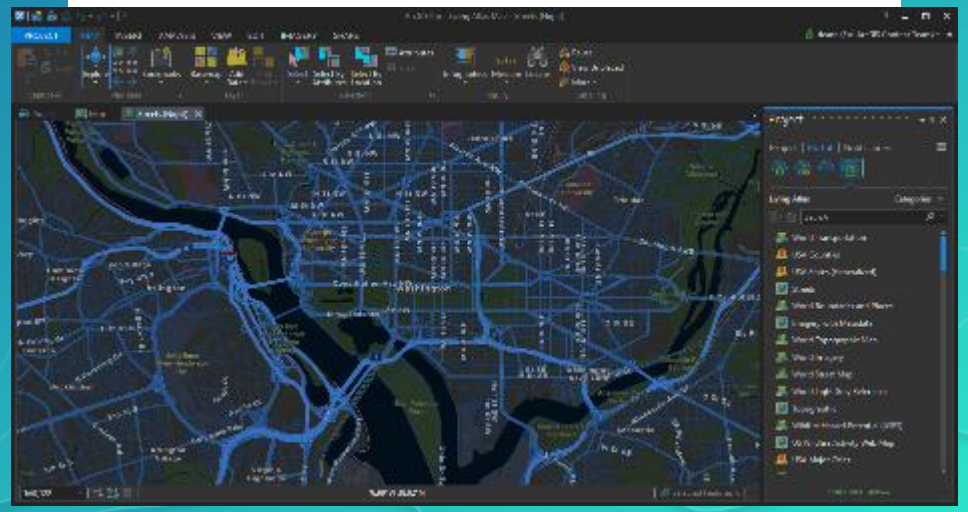


Accessing the Living Atlas through ArcGIS

Multiple ways to Experience the Living Atlas through ArcGIS Apps

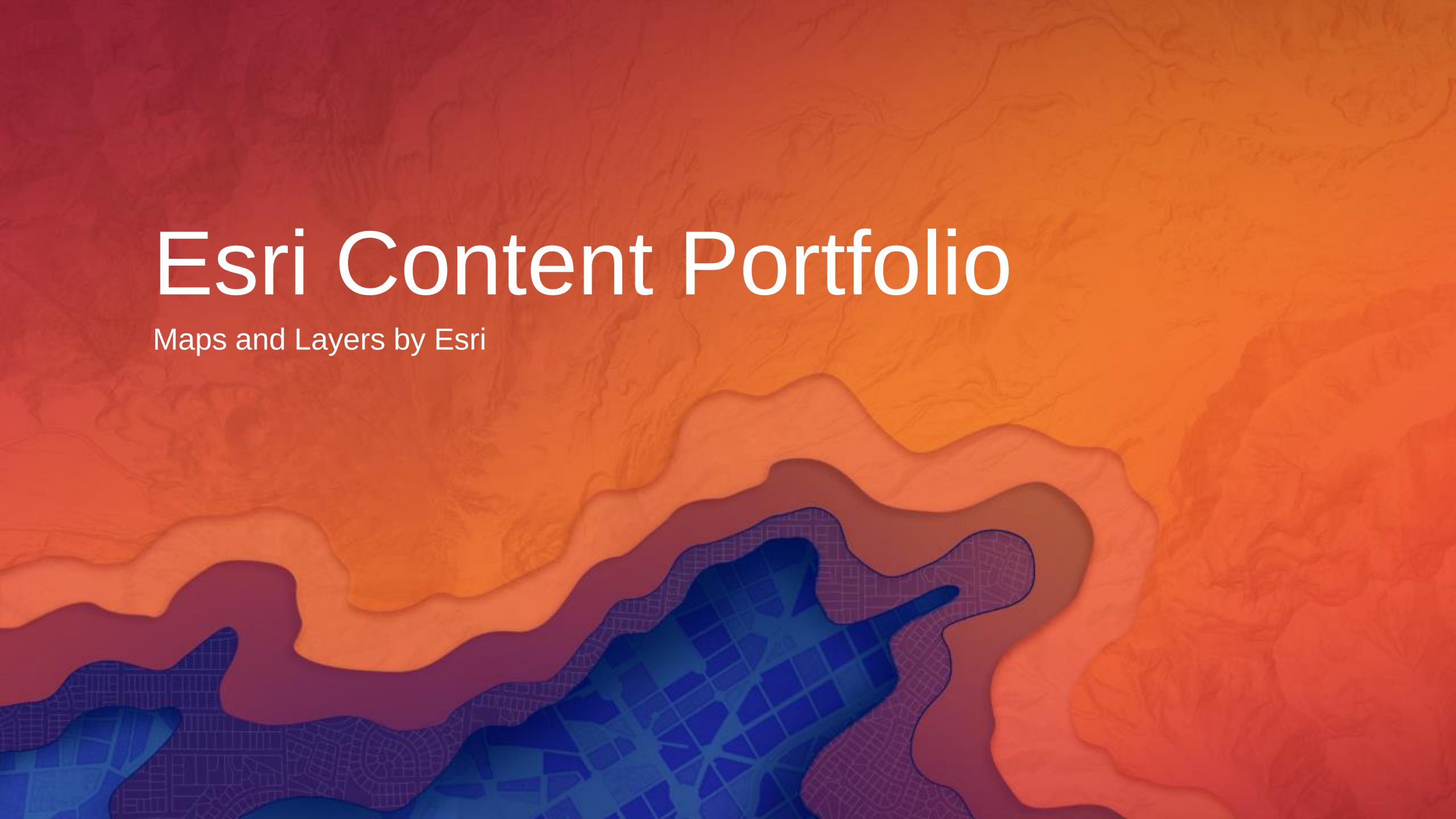
- **ArcGIS Online & ArcGIS Enterprise (Portal) 10.5+!**
  - **Gallery: Esri Featured Content**
  - **Add Data: Browse Living Atlas Layers**
  - **Analysis: Choose Living Atlas Layers**
- **Living Atlas of the World Website**
  - **livingatlas.arcgis.com**
  - **Browse and preview maps, layers, and tools**
  - **Contribute maps, layers, and data**
- **ArcGIS Desktop**
  - **ArcGIS Pro 1.2+**
  - **Open Maps, Add Layers, Perform Analysis**





Esri Content Portfolio

Maps and Layers by Esri



Esri Content Portfolio within Living Atlas

Esri Content Portfolio within Living Atlas

Basemaps

Demographics and Lifestyle

Transportation

Urban Systems

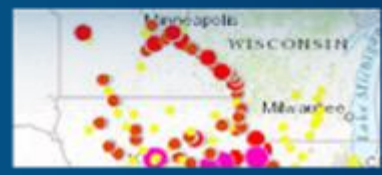
Boundaries and Places

Imagery

Landscape

Oceans

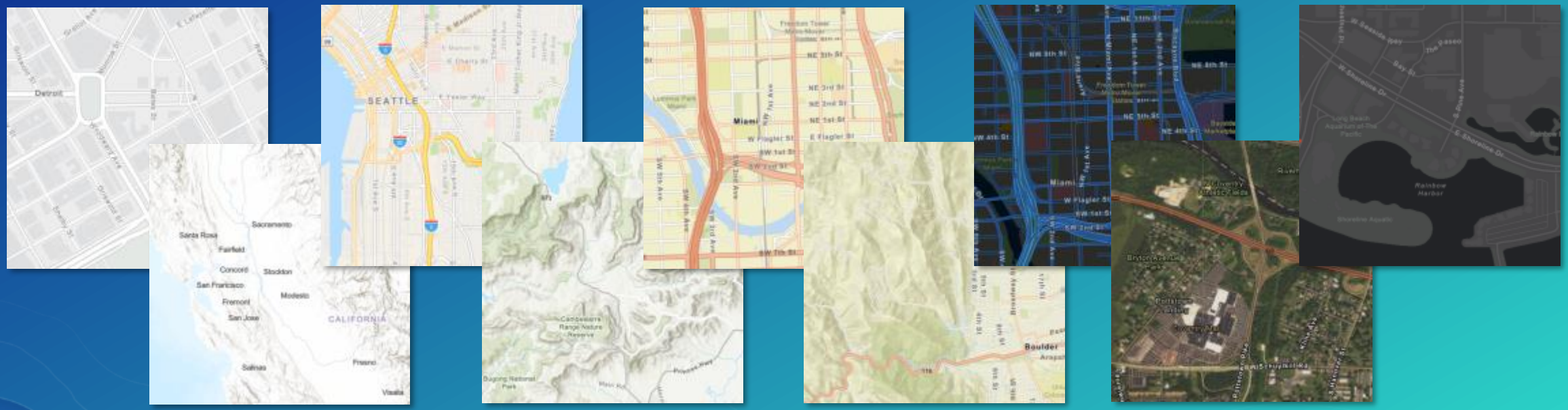
Earth Observations



Basemaps

Suite of basemaps to support your web maps and applications

- Variety of Basemaps for Different Maps and Apps
  - From neutral background maps to rich foreground maps, emphasizing human or physical worlds



- Now Available in both ‘Vector’ and ‘Raster’ Format!

Reference Maps for our World and Context for Your Work

Esri Vector Basemaps

What's New and Plans for 2017

- Initial Version (v1) Now Released and Available to Use in Your Maps & Apps
  - Configure to use in your Organization's Basemap Gallery
- Includes 9 'Core' Styles and other 'Custom' Styles to use as-is or customize
  - Introduce Oceans basemap in vector format, and others …?
- Now Includes Global Coverage of large-scale street data
  - Using best available data from HERE, OpenStreetMap, and GIS Community
  - Will supplement with additional data layers, such as physical place names, global contours and community roads, etc.
- Localization: ongoing efforts to localize the maps for different regions
  - Multiple Languages: will offer vector basemaps with place labels in many languages
  - Disputed Places: existing maps enable different treatments of disputed places

Vector Basemaps

What's New and Next …

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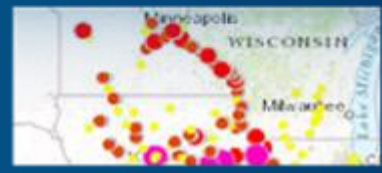


World Imagery

What's New and Plans for 2017

- Multi-scale map featuring Most Recent, High-res imagery from Best Available Sources
  - Major updates to World Imagery map in 2016-2017

- Updates with DigitalGlobe basemap imagery (began Q3 2016)
  - Over 100 million sq. km. of imagery updated in past year
- Updates with DigitalGlobe to continue in remainder of 2017 and beyond …
  - Next Updates for Afghanistan, Australia, Canada (north), and United Kingdom
  - Additional Updates for 100+ Metros in Q3-Q4, Refreshes for Hundreds More

World Imagery (continued)

What's New and Plans for 2017

- Continue to Publish Community Maps Imagery
  - Esri published imagery for approximately 100 communities in past year
  - Would like to grow publishing of community content in 2017
    - We currently have 250+ contributors providing about 18 million sq. km. of imagery

  - Opportunity to publish recent, high-res imagery down to 2cm resolution

World Imagery (continued)

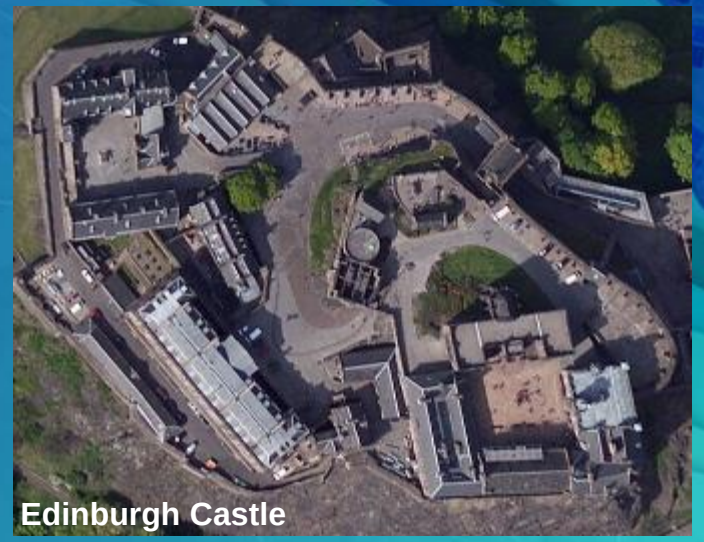
What's New and Plans for 2017

- Cache and Publish High-Res Imagery out to Smaller Scale Levels
  - Include the 1m or better imagery at Levels 12-13 instead of the current 15m or 2.5m imagery
  - Will improve the clarity and currency of the imagery in most areas

World Imagery (Clarity)

Alternative view of the World Imagery map (now in Beta release)

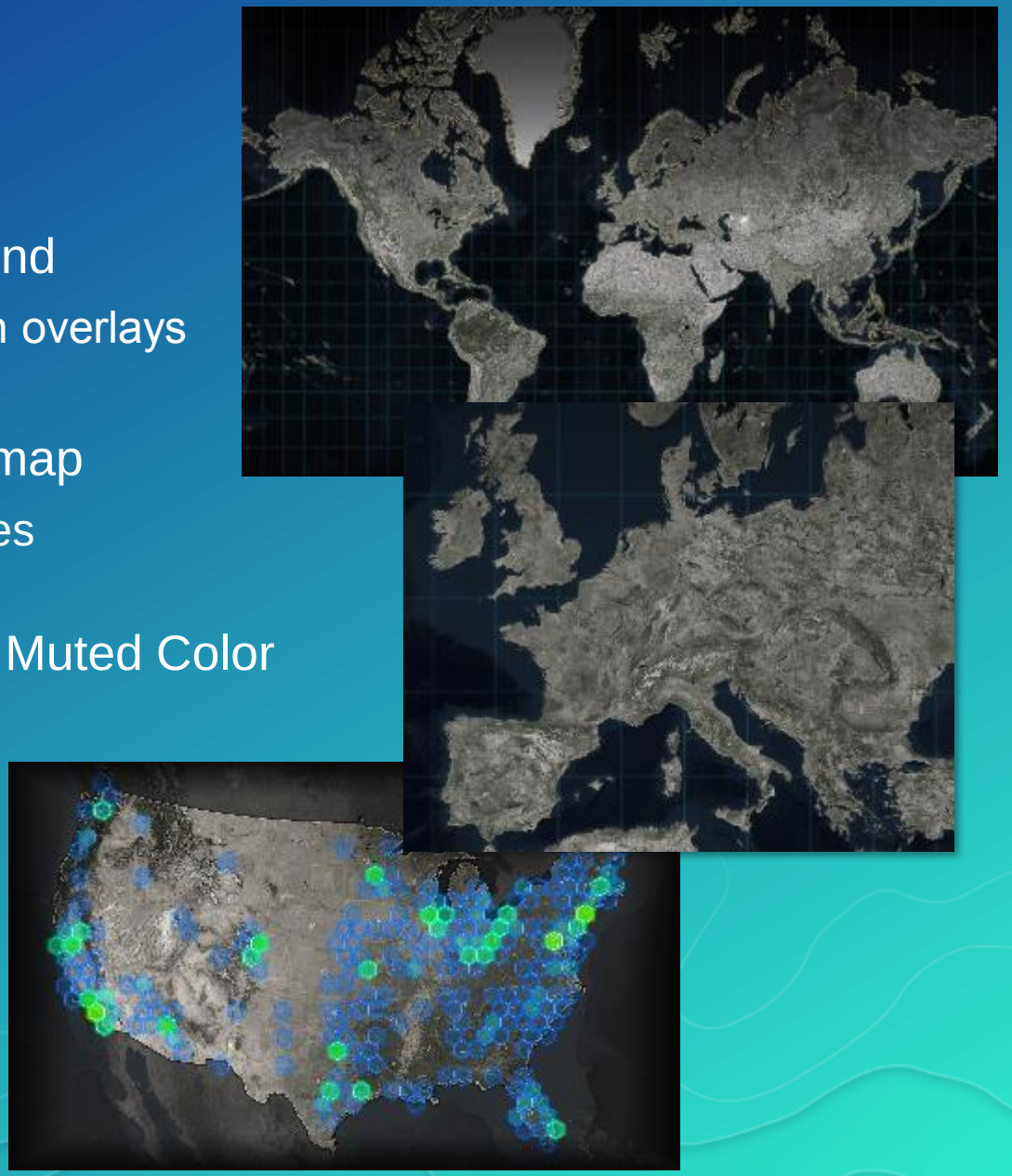
- View of World Imagery featuring Alternative Imagery from Archive
  - Reveals a curated set of imagery from Esri's multi-year archive
- Optimized for Image Clarity and Accuracy
  - Less haze or cloud cover, higher positional accuracy
  - Typically less current than default imagery content
  - May feature most recent imagery, if also clearest and/or most accurate
- Designed for Use Cases that Require imagery of Highest Clarity
  - Feature collection and editing, change detection, etc.
- During Beta, Esri will be Curating in More Imagery from Archive



World Imagery (Firefly)

Alternative view of the World Imagery map (now in Beta release)

- View of World Imagery for use as Neutral Background
  - Stylized to de-saturate color so it doesn't compete with overlays
- Features the Same Imagery as the World Imagery map
  - Transitions to standard full-color imagery at large scales
- Designed for Use Cases that Require Imagery with Muted Color
  - 'Firefly cartography', maps with bright overlays, etc.
  - Includes the texture and richness of imagery
- During Beta, will refine style and migrate system

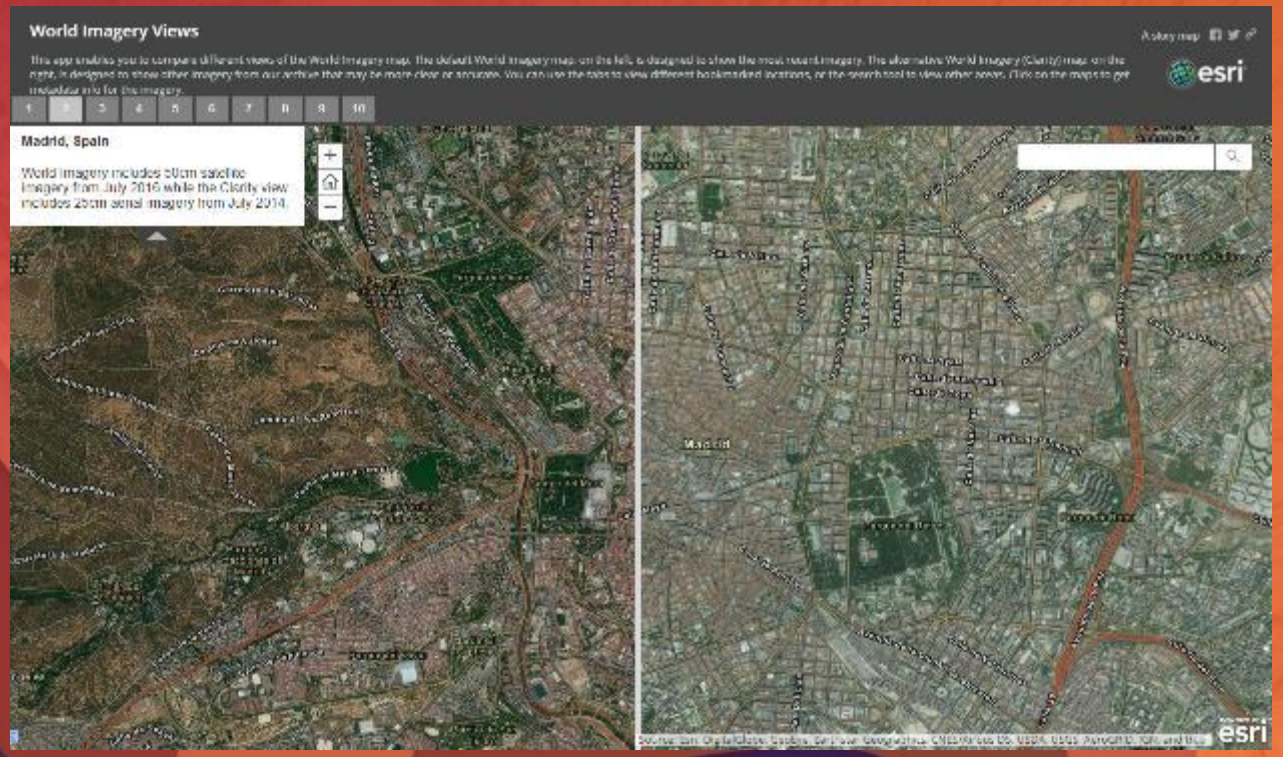


World Imagery (Historical)

Enable access to full set of imagery from archive (Road Ahead for 2017 and Beyond)

- Expose additional ‘historical’ imagery from archive in separate tile service and/or image service
  - Includes imagery beyond what is curated into the “Clarity” view
- Enable users to define imagery to be displayed in layer definition
  - Show imagery for specific time period, or from specific provider
- May require update to ArcGIS client apps to support display

Caution: Subject to Change!



World Imagery

What's New and Next …

Sentinel Imagery

Planned Addition to the Living Atlas

- Esri is Planning to Publish Image Services with Sentinel 2 Imagery
  - Sentinel 2A and 2B will provide global, multi-spectral imagery of planet updated every 5 days
    - Improves upon the temporal and pixel resolution of Landsat 8 imagery
  - Goal is to provide easy access to Sentinel 2 imagery for visualization and analysis
    - Reduce the need to download complete Sentinel 2 scenes
- Publishing Plans
  - Publish image services for Sentinel imagery similar to what we have now for Landsat
    - Publish most recent Sentinel scenes (e.g. 5-10 scenes per location)
  - Make available as ‘subscriber’ content (i.e. no credits) in ArcGIS Online
  - Feature in the Living Atlas (i.e. image layers, web maps, web mapping app)
  - ETA: Q4 2017

Caution: Subject to Change!

Esri Content Portfolio within Living Atlas

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Basemaps

Demographics and Lifestyle

Transportation

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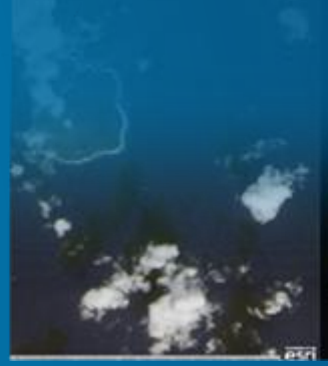

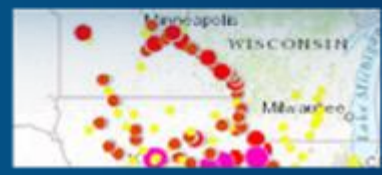

Esri Boundary Layers

Current Status and the Road Head

- Boundary Layers available in ArcGIS Online for Visualization and Analysis
  - Boundary Layers for over **130 countries** available now!
  - Featured in Living Atlas and Optimized for Use in Analysis Tools
  - Updates published (as available) as part of ArcGIS Online releases
    - Updates published in June for 45 countries (e.g. Poland)
- Boundary Layers available now in ArcGIS Enterprise for Visualization and Analysis
  - Enterprise users can download SD files from MyEsri and publish with Portal
    - 10.5 Release: includes boundaries for World and United States
    - 10.5.1 Release: includes boundaries for over 130 countries
- Road Ahead: additional boundary layers by country from local authoritative sources
  - Additional levels of geography, updated more frequently (as required)

Landscape

What’s Next …

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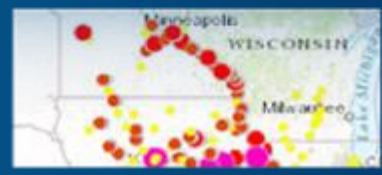


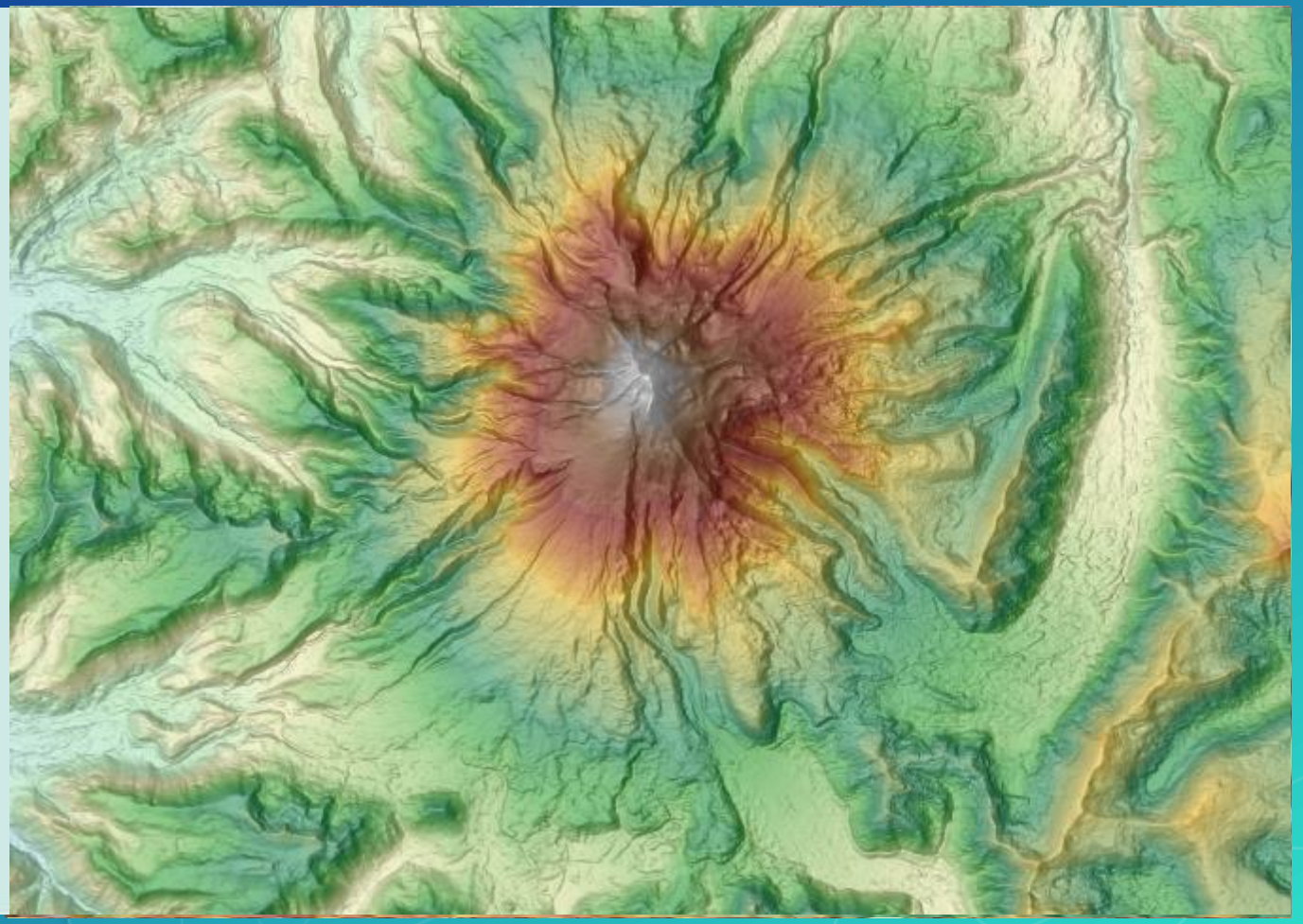
Landscape – Elevation/Bathy

- Airbus WorldDEM4Ortho - Q4 2017
  - 24m Global pole to pole with 4m vertical accuracy
  - Added to profile GPTool

    Export Exceptions

    Kosovo, Senegal coming later 2017

    Not available due to export restrictions Ethiopia, DR of the Congo, Ukraine, Eritrea, Azerbaijan, West-bank, Gaza-strip
- New dark gray multi-dimensional Hill shade - Q4 2017
- Roughness/Rugosity views – Q1 2018
- New GEBCO update - Q4 2017



Landscape

- MDA World Landcover 2016
  - 2013-2016 change detection
- USA Croplands historical layers
  - 2008-2016(present)
  - Summary maps
- USA Soils reporting widget based on user defined area.
  - Percent soil types
  - Soil water storage capacities
  - Horizon summaries
  - 72 hr precipitation estimate
  - Current drought condition

Landscape

- World Population Estimate 2015
  - update in Q2 with new UN estimates from 2015.
- World Population Estimate 2016
  - Additional census data sources
  - Greatly improved accuracy (new settlement algorithm)
  - Move to two updates per year
  - Q4

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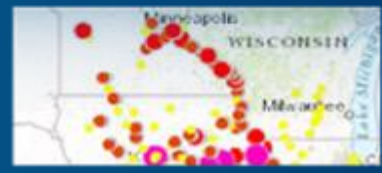
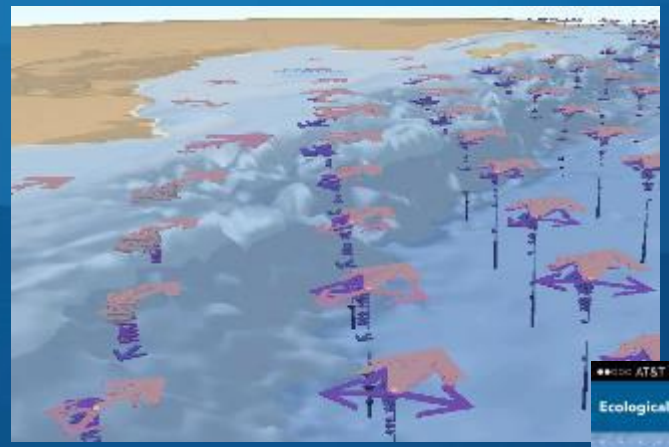
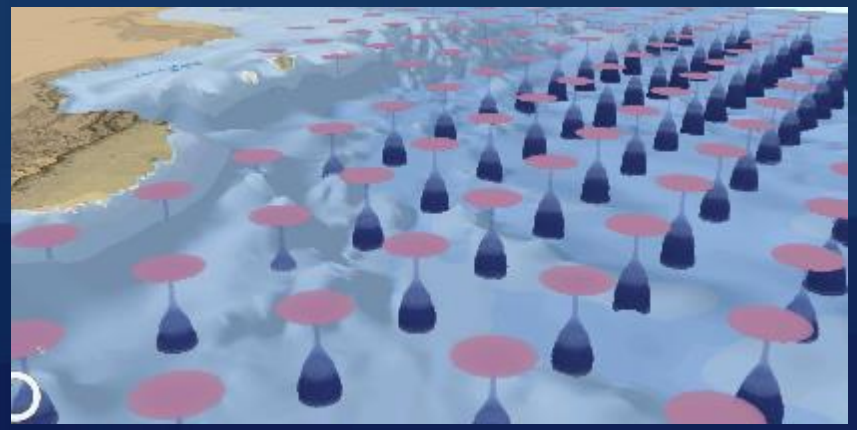


Oceans - Ecological Marine Units (EMUs)

- EMU's will get additional attribution
  - Average Current Direction
  - Average Current Velocity

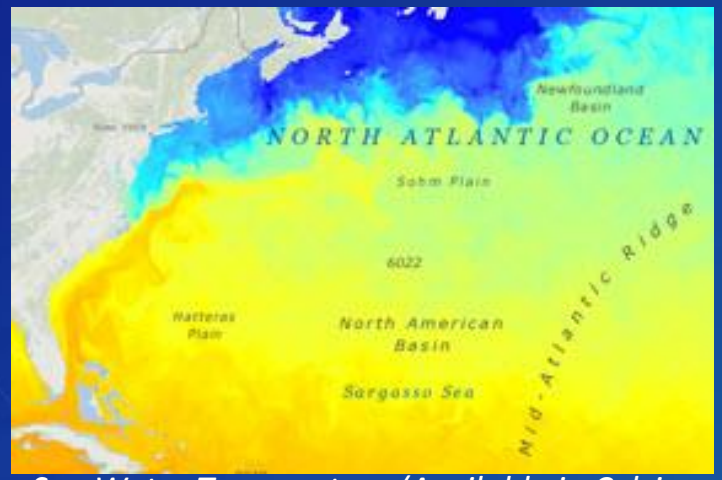


- EMU's are being localized
  - Support smaller detailed research where high density data exists
  - Support in-house workflows for Hydrographic offices
- New Visualization Techniques



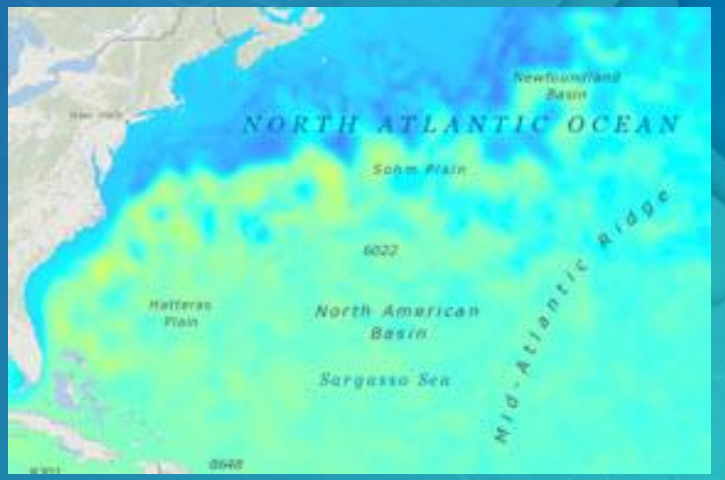
EMU Story Map (New): http://arcg.is/2rErPAl
EMU Website: http://www.esri.com/ecological-marine-units

Oceans - HYCOM (HYbrid Coordinate Ocean Model)



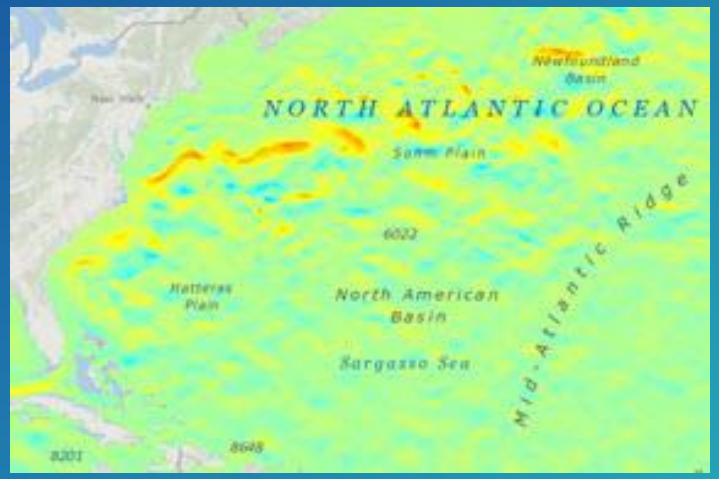
Sea Water Temperature (Available in Celsius and Fahrenheit).

Salinity (Practical Salinity Scale - PSS)

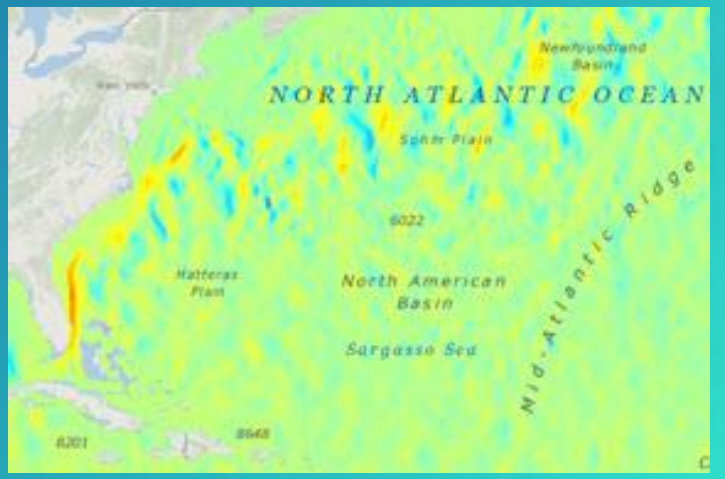


Sea Surface Elevation (Available in meters and feet)

Sea Water Current (As vector arrows for visualization)



Eastward Velocity (ms-1)

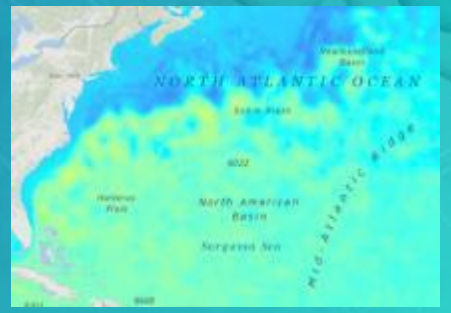


Northward Velocity (ms-1)

Oceans - HYCOM

- HYCOM Temperature front detection. - Q4
- HYCOM Route optimization using least cost-path analysis against the current velocity information for shipping vessels. - Q1 2018
- Add daily chlorophyll to help identify hot spot areas for fishing, security, or fishery planning. - Q1 2018
- Field operations planning for maritime industry divers and survey equipment – provide ability to plan for safe operations.

Sea Water Current Direction/Velocity



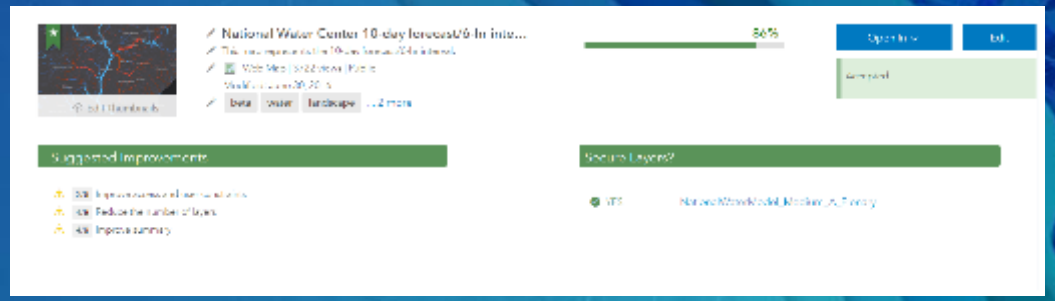
Sea Surface Elevation

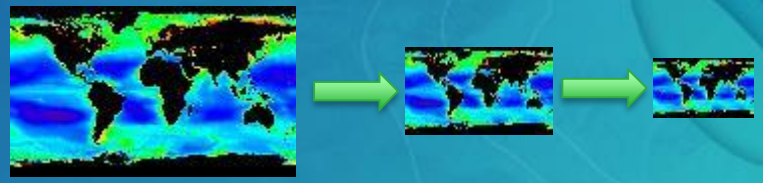
Living Atlas Experience

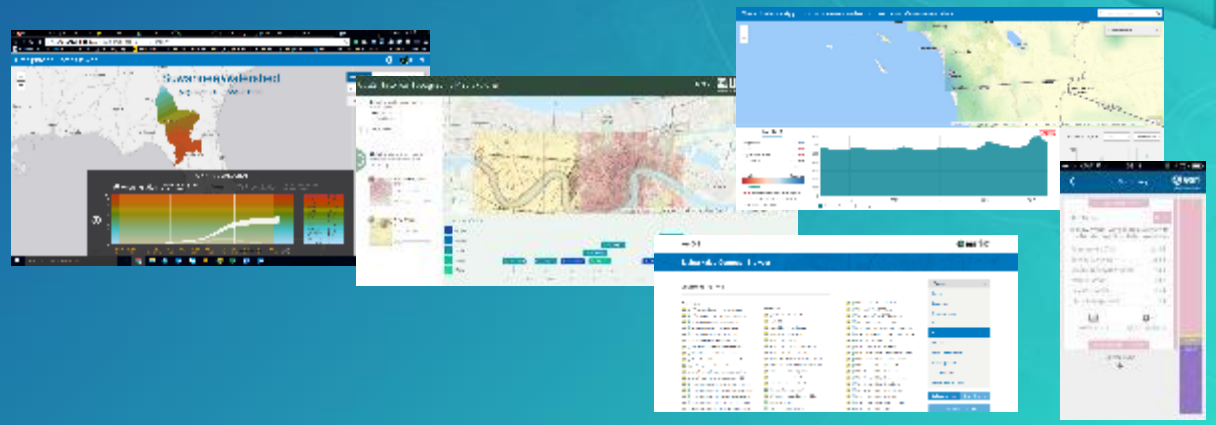
What’s Next …

Living Atlas

- Website
  - Items Scoring moving to Item Pages
  - Next Generation thumbnails – Auto sizing
  - Service items checked daily – ArcGIS Layers, Maps, and Storymaps
  - Improved Taxonomy
  - Improved Search – sematic and geographic
  - NEW Apps page
  - Higher requirements to participate







- Pro
  - Improves search results sorting
  - Additional items types like styles and pro packages

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