Living Atlas of the World: An Introduction

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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…

…with Curated Content on Many Topics
Content is Published by Esri, Partners, and Users
Built by the ArcGIS Community and Curated by Esri

Esri Content

COMMUNITY

Nearmap 7cm Imagery
MB – Research Boundaries

NOAA Real-time Weather

Canal & River Trust

EEA Land Cover
Accessing the Living Atlas through ArcGIS

Multiple ways to Experience the Living Atlas through ArcGIS Apps

• ArcGIS Online & ArcGIS Enterprise (Portal) 10.5 - 10.6.1!
  - Content: Living Atlas Content
  - Add Data: Browse Living Atlas Layers
  - Analysis: Choose Living Atlas Layers
    - Includes “Esri Boundary Layers” for Enterprise

• Living Atlas of the World Website
  - livingatlas.arcgis.com
  - Browse and preview maps, layers, and tools
  - Contribute maps, layers, and data

• ArcGIS Pro 1.2+
  - Open Maps, Add Layers, Perform Analysis
Esri Content Portfolio within Living Atlas

Environment
Infrastructure
Boundaries
Imagery
Basemaps
People
Trending
Esri Content Portfolio within Living Atlas

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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
Benefits of Vector Basemaps

Delivering basemaps in vector tile format provides several benefits to users:

- **More Styles Available**
  - Currently 9 ‘core’ styles from Esri
  - Several more ‘custom’ styles

- **Customizable by Designers & Developers**
  - Turn layers on / off
  - Change colors and other renderers
  - Change labels for different languages
  - Change treatment of disputed places

- **Look Great on Hi-Res Displays**
  - Vector features and labels look sharper

- **Easier to Update**
  - Cache updates in hours, not weeks
  - Smaller cache is faster to update

- **More Interactive**
  - Display at any scale with clearer rendering
  - Rotate the map / live text

- **Support Other Map Projections**
  - Available in other projections (GCS, BNG, …)
  - Client-side re-projection of tiles

- **Better Support Disconnected Use**
  - Store larger areas on small devices
Esri Vector Basemaps

What’s New

• Latest Version (v2) Released in December and Available to Use in Your Maps & Apps
  - Enable to use in your ArcGIS Online Organization’s Basemap Gallery

• Now Includes Global Coverage of Large-scale Street data
  - Using best available data from HERE, OpenStreetMap, and GIS Community

• Localization: ongoing efforts to localize the maps for different languages and regions
  - Languages: now includes default (global+local) plus 6 more languages (New!)
    - Chinese, French, German, Japanese, Russian, and Spanish are now available. More to follow …
  - Disputed Places: vector basemaps enable different treatments of disputed places
    - Custom views available or configurable (e.g. India, China, Korea, Europe, United States, etc.)

• New Vector Basemap Style Editor now available for users to create custom styles
  - Browser based editor to create and save new vector basemaps (beta now available!)
Basemaps
Foundation maps in multiple styles
OpenStreetMap
Collaborative Project by a Community of Mappers to Create a Free, Editable Map of the World

• Esri has enabled Access and Editing of OpenStreetMap for many Years
  - Users: Featured Basemap in Online, Used in Esri Basemaps
  - Contributors: ArcGIS Editor for OSM, Esri Imagery in OSM Editors

• OpenStreetMap Vector Basemap (New!)
  - Esri providing a new vector basemap based on OSM data and cartography
    - Map is created using ArcGIS Pro and hosted in ArcGIS Online
    - Map will be updated every 2-3 weeks with the latest OSM data initially
      - Over time, Esri intends to accelerate the pace of updates

  - Map will be freely available to all users and developers to use in their maps and apps!
  - Now in Beta release
OpenStreetMap
Esri Content Portfolio within Living Atlas

- Environment
- Infrastructure
- People
- Basemaps
- Imagery
- Boundaries
- Trending
World Imagery
Esri’s flagship imagery basemap

• Multi-scale map featuring Most Recent, High-res imagery from Best Available Sources
  - Major updates to World Imagery map in 2016-2018

• Updates with DigitalGlobe basemap imagery (began Q3 2016)
  - Over 175 million sq. km. of imagery updated in past ~2 years
  - Updates will continue in remainder of 2018 and beyond …

• Updates from GIS User imagery through Community Maps
  - Hundreds of contributions from national, provincial, and local sources
    - Austria, Netherlands, New Zealand, Spain, Switzerland, City of Berlin, Many U.S. & Canadian Cities, …
World Imagery (Clarity)
Alternative view of the World Imagery map (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.
**World Imagery (Firefly)**

Alternative view of the World Imagery map

- 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
World Imagery (Wayback)
Multiple Vintages of the World Imagery map from our Archive (now in Beta release)

• Over 80 Versions of World Imagery going back ~5 years
  - Initially releases from January 2014 through June 2018
  - Published as performant and scalable basemap tile layers

• View Change over Time
  - Reveals typically 3-5 different views of an area in recent years

• Lock In to a Specific Version
  - Reference a specific version for your AOI (e.g. community imagery)
  - Better align with version of imagery used for data collection
  - Preserve the ‘current state’ at the time of your analysis

• During Beta, Esri will be Adding More Imagery from Archive
World Imagery Enhancements
NAIP Imagery
Nationwide 1m or better resolution imagery for the Continental United States

- Nationwide Image Service
  - Imagery provided courtesy of USDA FSA
- Multi-band (4-band) Imagery
  - Supports Natural Color, Color Infrared, NDVI
- Imagery available for the Past 8 Years
  - Starting with NAIP 2010 through Latest
  - Updated with All NAIP 2017 Imagery Now!
- Available with ArcGIS Online Subscription
- What’s Next: NAIP Tile Layer
Landsat 8 Imagery
Global 15m imagery for regional land analysis

- Global: Multi-temporal, Multi-spectral
- New scene every 16 days (cloud permitting)
  - Updated daily with approx. 400 scenes
- Dozens of scenes available per location
  - Now Hosted on Amazon Web Services (AWS)
- Freely Accessible by all ArcGIS Users!

- Landsat GLS Imagery also Available
  - Multi-epochs available from 1975 to 2010

- New Polar Landsat Services Now Available!
  - Image services in Arctic and Antarctic projections
Sentinel-2 Imagery
Global 10m imagery for Earth observation

- Continuity with the SPOT and Landsat missions
- Multispectral
  - 13 spectral bands (4-10m, 6-20m, 3-60m)
  - 3 Red-Edge bands for enhanced vegetative analysis
- Multitemporal
  - Location revisit every 5 days
  - Last 14 months available via ArcGIS Online
  - Updated daily with latest available imagery
- Hosted in Amazon Web Services - Frankfurt Region
- Open access via Sentinel Explorer
- Full access with ArcGIS subscription (no credits)

Sentinel-2 is part of the European Commission (EC) Earth observation program - Copernicus
Imagery courtesy of the European Space Agency (ESA)
Esri Boundary Layers
Current Status and the Road Head

• Boundary Layers available in ArcGIS Online for Visualization and Analysis
  - Boundary Layers for about 135 countries from multiple sources (e.g. MBR, TomTom, Garmin)
  - 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 46 countries (e.g. All of Europe, United States)

• Boundary Layers available now in ArcGIS Enterprise for Visualization and Analysis
  - Enterprise users can download SD files from MyEsri and publish with Portal
  - 10.6 and 10.6.1 Releases: includes boundaries for all 135 countries (i.e. MBR)

• In Addition: additional boundary layers by country from local authoritative sources
  - Additional levels of geography, updated more frequently (as required)
  - Available now for Austria, Canada, Germany, and Japan
Demographics and Lifestyle Maps: What’s New
Demographic layers and tools available for use in ArcGIS Platform

- Demographics are Integrated into the ArcGIS Platform
  - Mapping, Data Enrichment, Infographics, Reporting
  - Access in ArcGIS Online, Enterprise, and Pro
  - Premium Content Available with an ArcGIS Online Subscription

- Latest 2018 / 2023 Data Now Available for the United States!
  - Over 50 Ready-to-Use Maps for Demographics and Lifestyle Data
  - Thousands of Variables to Create Custom Maps and Popups

- Now Offering a Global Solution
  - Foundation Data for over 130 Countries now available
    - Updates for 90 countries last year, with ~80 more already in 2018!
      - June updates include 30 countries in Europe and other regions
  - More Detailed Data for Selected Countries (e.g. Canada, Germany)
Esri Content Portfolio within Living Atlas

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- Imagery
- Boundaries
- Trending
Elevation: Terrain and TopoBathy Layers
Elevation data is foundational layer in the Platform

- Global collection of multi-resolution & multi-source
- Best public and community data
  - USGS, NASA, NGA, CGIAR and national mapping organizations
  - Several authoritative data providers
- Ready to use maps and tools
  - Visualization and Analysis
  - 2D and 3D
- Included with Online Subscription
  - No credits
  - No download
Elevation data Now includes Airbus WorldDEM4Ortho

What's New

- Global pole to pole
  - exceptions Azerbaijan, DR Congo, Ukraine
- 0.8 arc sec (~ 24.7 meter) resolution
  - 4 meter vertical accuracy* at global scale
- Improvements to:
  - World Elevation Image Service (Terrain & TopoBathy)
  - Elevation Analysis Services (Profile, Viewshed, Summarize)
  - 3D Elevation (Terrain3D & TopoBathy3D)
  - World Hillshade (coming soon)
  - World Topo Base (coming soon)

* Excluding urban areas (DTM like areas), substituted areas, areas of Antarctica
How to Participate

Share Your Work with the Living Atlas!
How to Participate in the Living Atlas Community

• Living Atlas Community includes:
  - **Contributors**: people who publish content that is included in the Living Atlas
  - **Curators**: Esri staff who review, approve, and organize content that is included in the Living Atlas

• Living Atlas Contributors can participate by:
  a) Publishing content directly through ArcGIS Online
  b) Publishing content indirectly through Community Maps

• Why Participate?
  1. Improve the visibility and accessibility of your ArcGIS Online content for use by others.
  2. Have your authoritative content hosted by Esri so it is available to you and your end users.

• Go to livingatlas.arcgis.com to Get Started!
Living Atlas Contributor: Publish Content through ArcGIS Online
Publish and Share Your Maps and Apps through ArcGIS.com to Enrich the Living Atlas

1. Create Item in ArcGIS.com using your ArcGIS Online Account / Organization
   - Layers can reference ArcGIS Online hosted services, ArcGIS Server services, WMS, etc.
     - Create new items for ArcGIS Server services and layers if you host them
     - Web maps can reference these layers or other feature collections that you publish

2. Follow Best Practices for Sharing and Share Items with “Everyone (public)”

3. Nominate your Items using the new Living Atlas Contributor app

livingatlas.arcgis.com/contribute
Living Atlas Contributor: Publish Content through Community Maps
Help Us Make Community Maps better with Your Data

• Goal is to Blend Your Local, Authoritative Data into the Appropriate Community Map
  - Improve the maps and layers with better data

• Identify Community Map(s) you can Support
  - World Imagery, World Topo Map, World Street Map, Ocean Basemap, World Elevation, etc.

• Get Started by using our Community Maps Contributor App
  - Register at communitymaps.arcgis.com

• Contributor App being updated to Simplify Process
  - New option to register hosted feature service to deliver data!
Please Take Our Survey on the App

Download the Esri Events app and find your event

Select the session you attended

Scroll down to find the feedback section

Complete answers and select “Submit”
## See Us Here

<table>
<thead>
<tr>
<th>WORKSHOP</th>
<th>LOCATION</th>
<th>TIME FRAME</th>
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<tbody>
<tr>
<td>Creating Great Content to Share in the Living Atlas of the World</td>
<td>SDCC – Room 31 B SDCC – Room 05 A SDCC – Room 09</td>
<td>Tue @ 1:00pm Thu @ 1:00pm</td>
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<tr>
<td>Using the Living Atlas for Environmental Science</td>
<td>SDCC – Room 16 B SDCC – Room 16 B SDCC – Room 07</td>
<td>Tue @ 2:30pm</td>
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<tr>
<td>Living Atlas: The Road Ahead</td>
<td>SDCC – Ballroom 02</td>
<td>Wed @ 1:00pm</td>
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<td>SDCC – Room 16 A SDCC – Room 17 B</td>
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<tr>
<td></td>
<td>SDCC – Room 08</td>
<td>Wed @ 2:30pm</td>
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<tr>
<td>Making Policy Maps for Your Community</td>
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<tr>
<td>Using Living Atlas World Elevation</td>
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- SDCC – Room 07
- SDCC – Ballroom 02
- SDCC – Room 16 A
- SDCC – Room 17 B
- SDCC – Room 08

WORKSHOP TIMES:
- Tue @ 1:00pm
- Tue @ 2:30pm
- Wed @ 1:00pm
- Wed @ 10:00am
- Wed @ 2:30pm
- Thu @ 4:00pm
- Fri @ 9:00am