



# New Water Content in ArcGIS Online

Daniel Siegel, Living Atlas Team

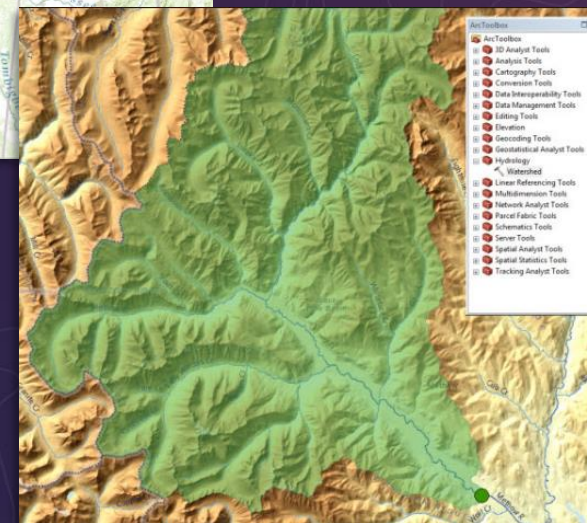
ESRI USER CONFERENCE

**Updates to Existing Services  
Analysis Services  
National Water Model**

**New Services  
Change in Storage  
ET and PET**

**What's next?**

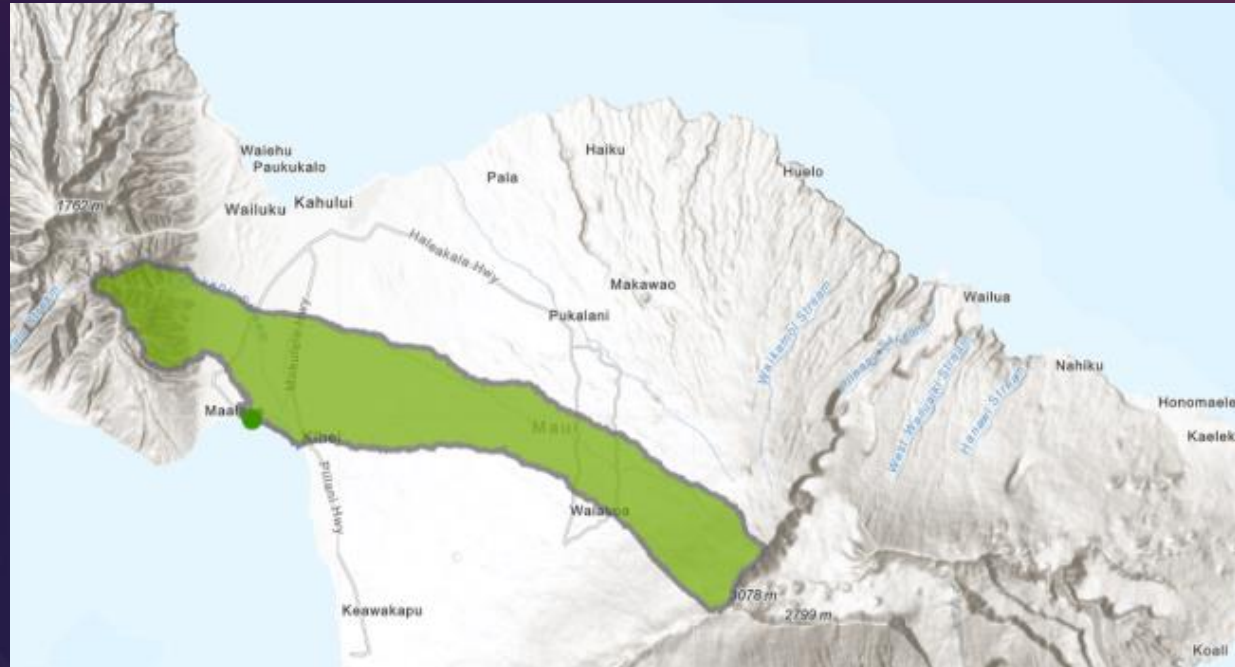
# Analysis Services



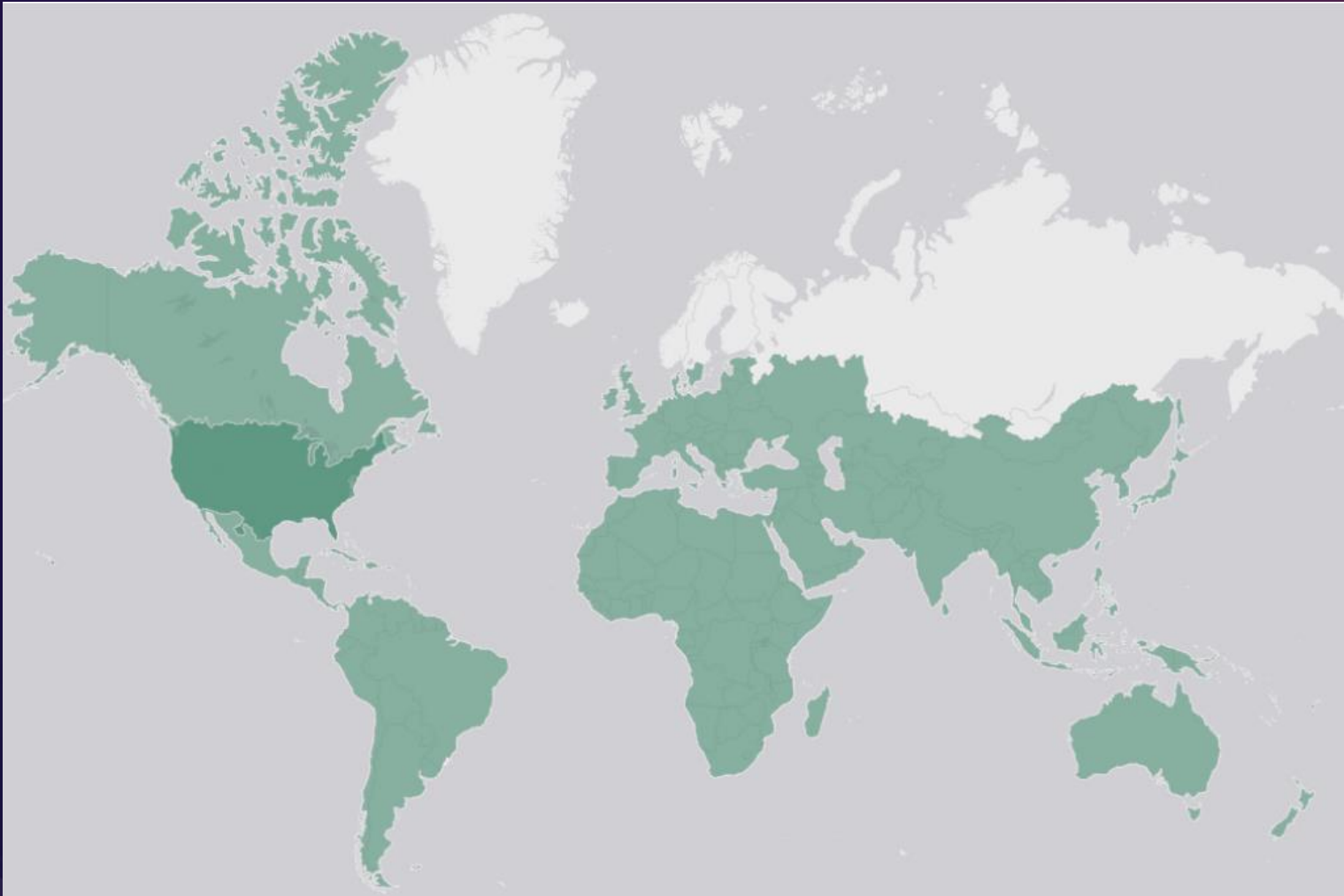
# New Regions Added

10m resolution data from NHDPlus High Res

- ✓ Hawaii
- ✓ Puerto Rico
- ✓ U.S. Virgin Island
- ✓ Guam



It's the first 10m resolution data added to these services!



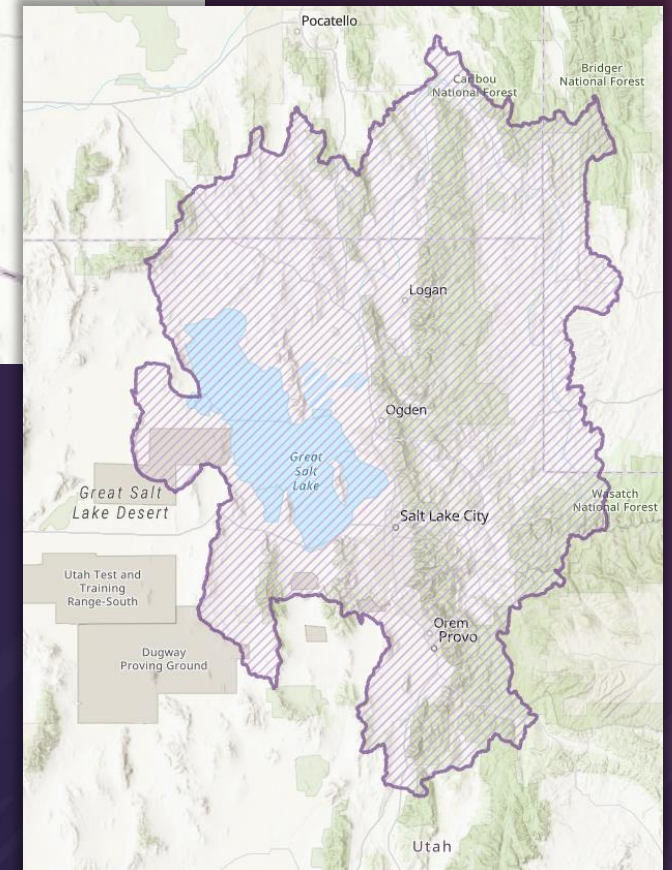
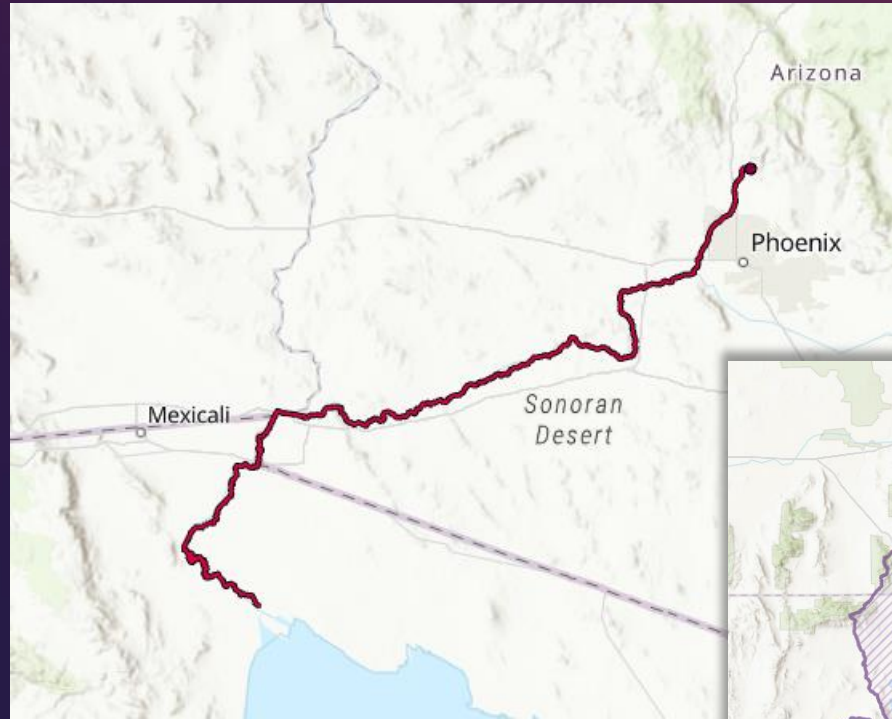
# Coverage Map



# Data Fixes

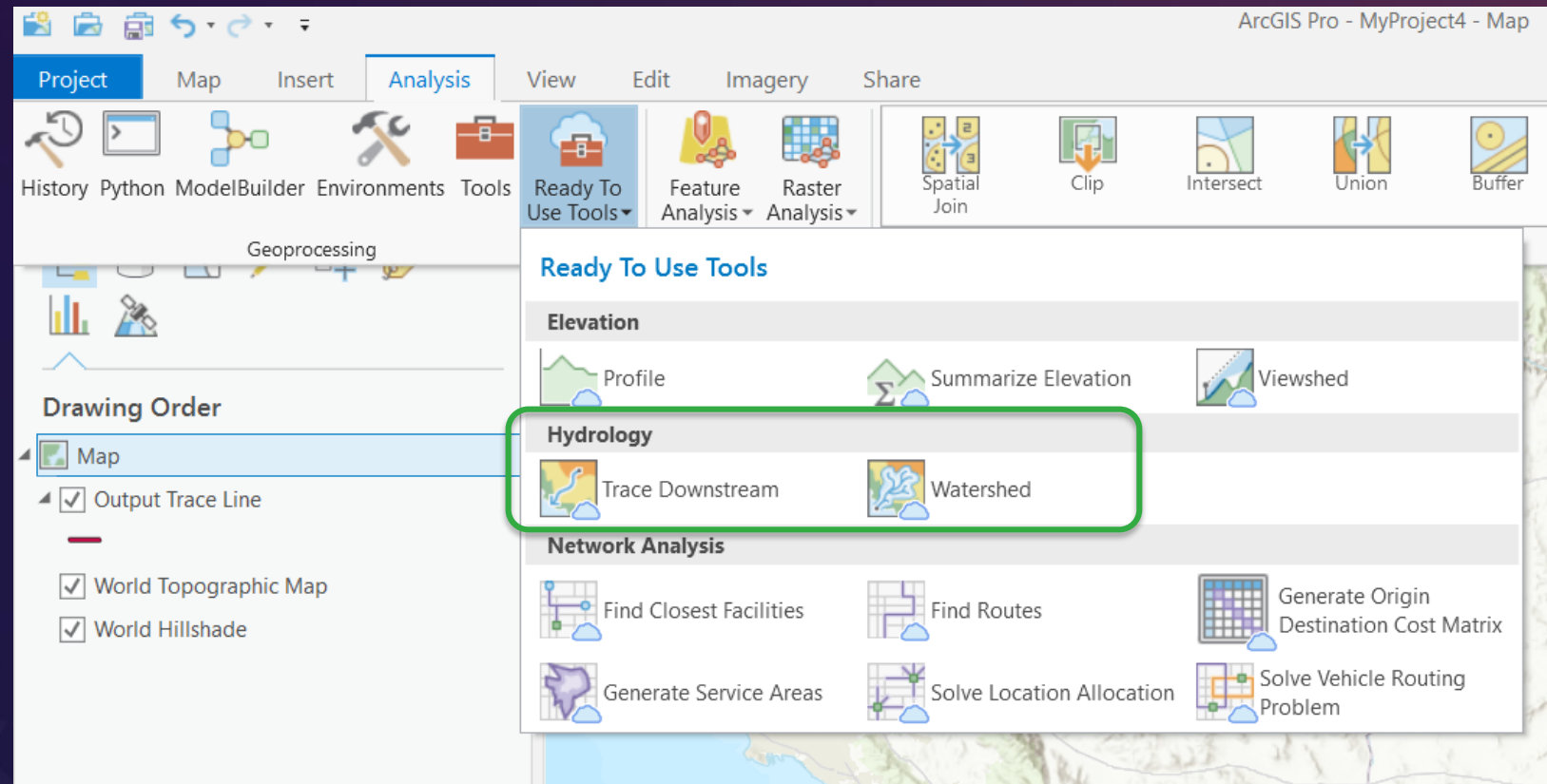
Based on User Feedback

- Great Basin
- Lower Colorado Basin



# How to Use the Analysis Services

## In ArcGIS Pro



# How to Use the Analysis Services

## In ArcGIS Online

The screenshot displays the ArcGIS Online interface. At the top, there is a navigation bar with tabs for 'Details', 'Add', 'Basemap', and 'Analysis'. The 'Analysis' tab is selected and highlighted with a mouse cursor. To the right of the tabs are icons for 'Save', 'Share', 'Print', and 'Directions'. Below the navigation bar is a sidebar titled 'Perform Analysis' containing a list of services. The 'Create Watersheds' and 'Trace Downstream' services are highlighted with a green border. The main area of the interface is a map of Europe and North Africa, showing various countries and cities. A scale bar at the bottom of the map indicates distances up to 600 miles. The map also features a vertical toolbar on the left side with icons for zooming in (+), zooming out (-), home, and refresh.

Details Add Basemap Analysis Save Share Print Directions

Perform Analysis

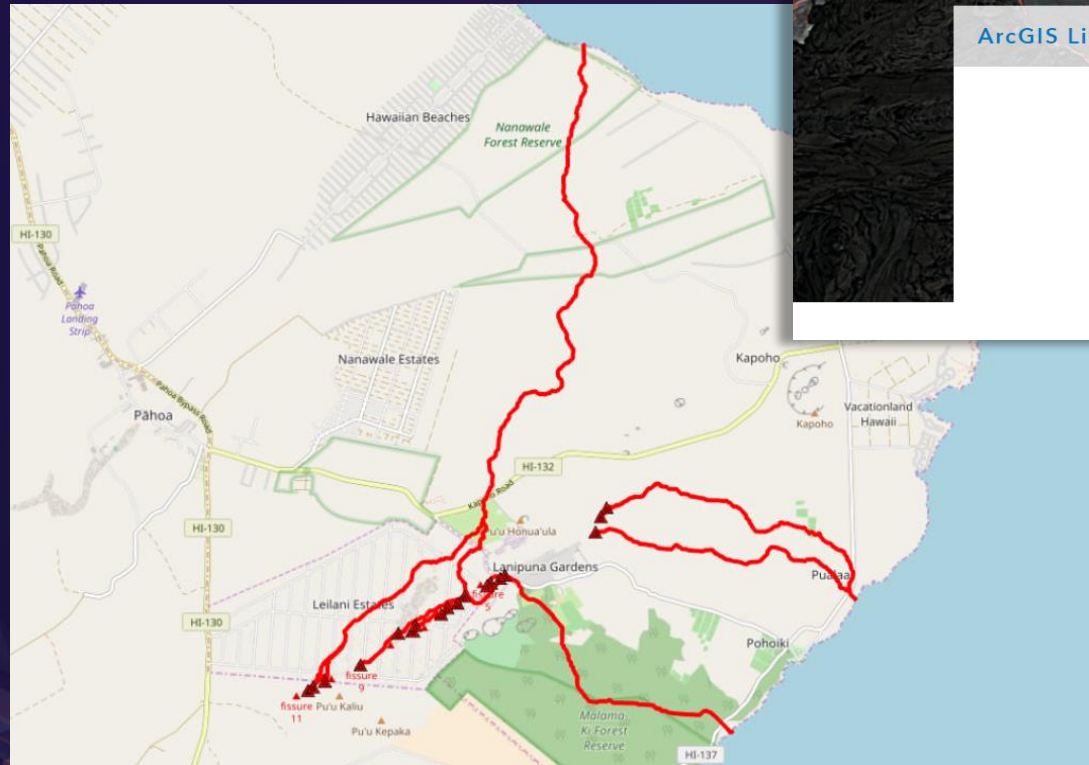
- Summarize Data
- Find Locations
  - Find Existing Locations
  - Derive New Locations
  - Find Centroids
  - Find Similar Locations
  - Choose Best Facilities
  - Create Viewshed
  - Create Watersheds**
  - Trace Downstream**
- Data Enrichment

Map labels: North Sea, IRELAND, UNITED KINGDOM, DENMARK, LITHUANIA, POLAND, BELARUS, GERMANY, AMSTERDAM, BERLIN, LONDON, PARIS, CZECH REPUBLIC, VIENNA, BUDAPEST, HUNGARY, ROMANIA, BUCHAREST, AUSTRIA, MILAN, FRANCE, ITALY, MADRID, BARCELONA, LISBON, SPAIN, ALGIERS, TUNIS, TUNISIA, TRIPOLI, GREECE, BULGARIA, ALGERIA, LIBYA, Atlas Mountains, Mediterranean Sea, Libyan

Scale: 0 300 600mi



Try the new lesson at [learn.arcgis.com](https://learn.arcgis.com)



# Which Way Will the Lava Flow?



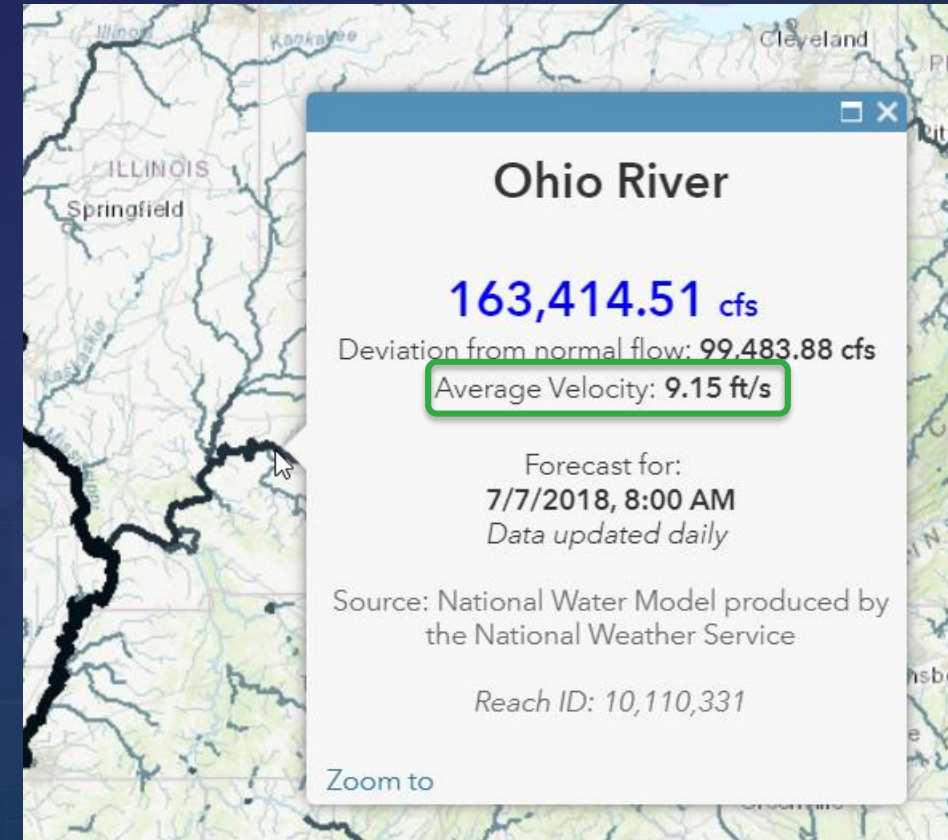
by Michael Dangermond | Natural Resources | May 14, 2018

# National Water Model

The background features a dark blue gradient with a faint grid pattern. On the left and right sides, there are abstract, colorful geometric shapes in shades of red, orange, yellow, and blue, resembling stylized buildings or data structures. The overall aesthetic is modern and technical.

# National Water Model

- Short-term forecast extended to 18 hours
- Velocity estimate added
- New, more scalable architecture





NWC FTP site





NWC FTP site

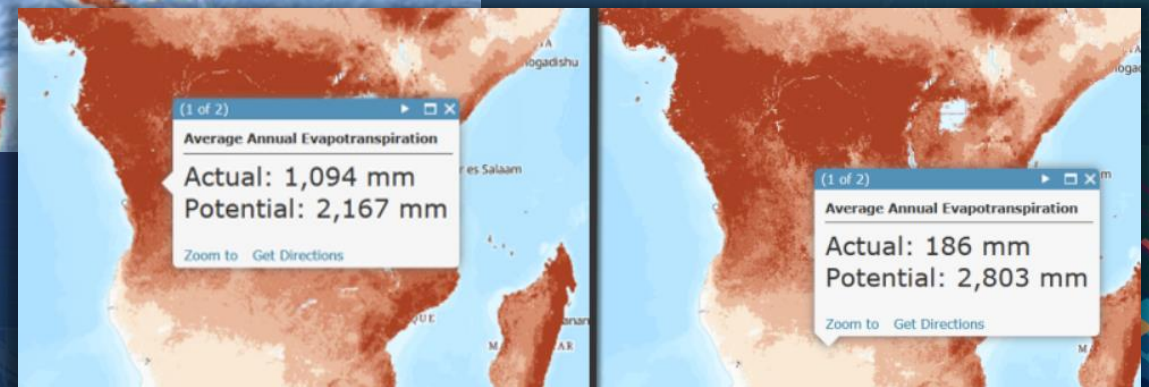
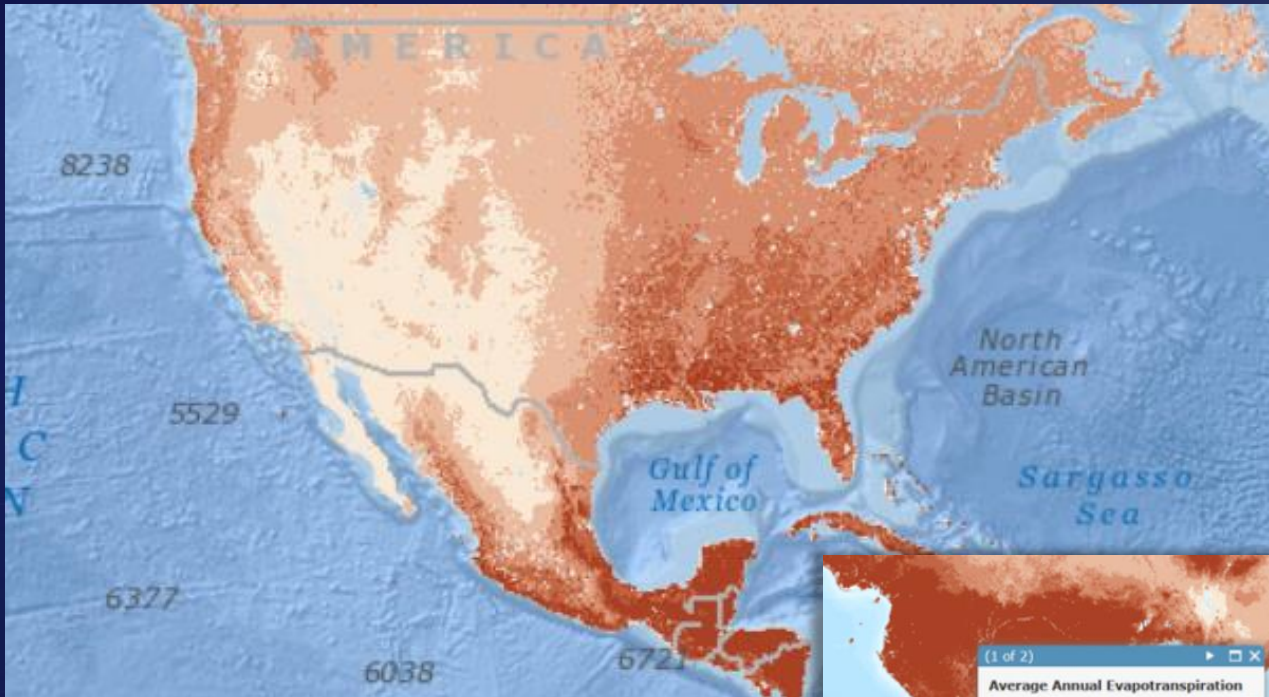


# New Services

The background features a dark blue gradient with a faint, light-colored grid pattern. In the bottom corners, there are abstract, colorful geometric shapes in shades of red, orange, yellow, and blue, resembling stylized buildings or data structures. The overall aesthetic is modern and technological.

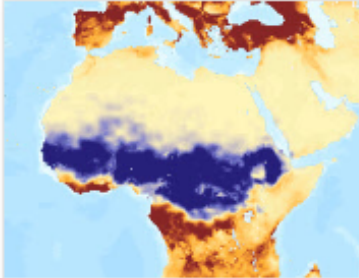
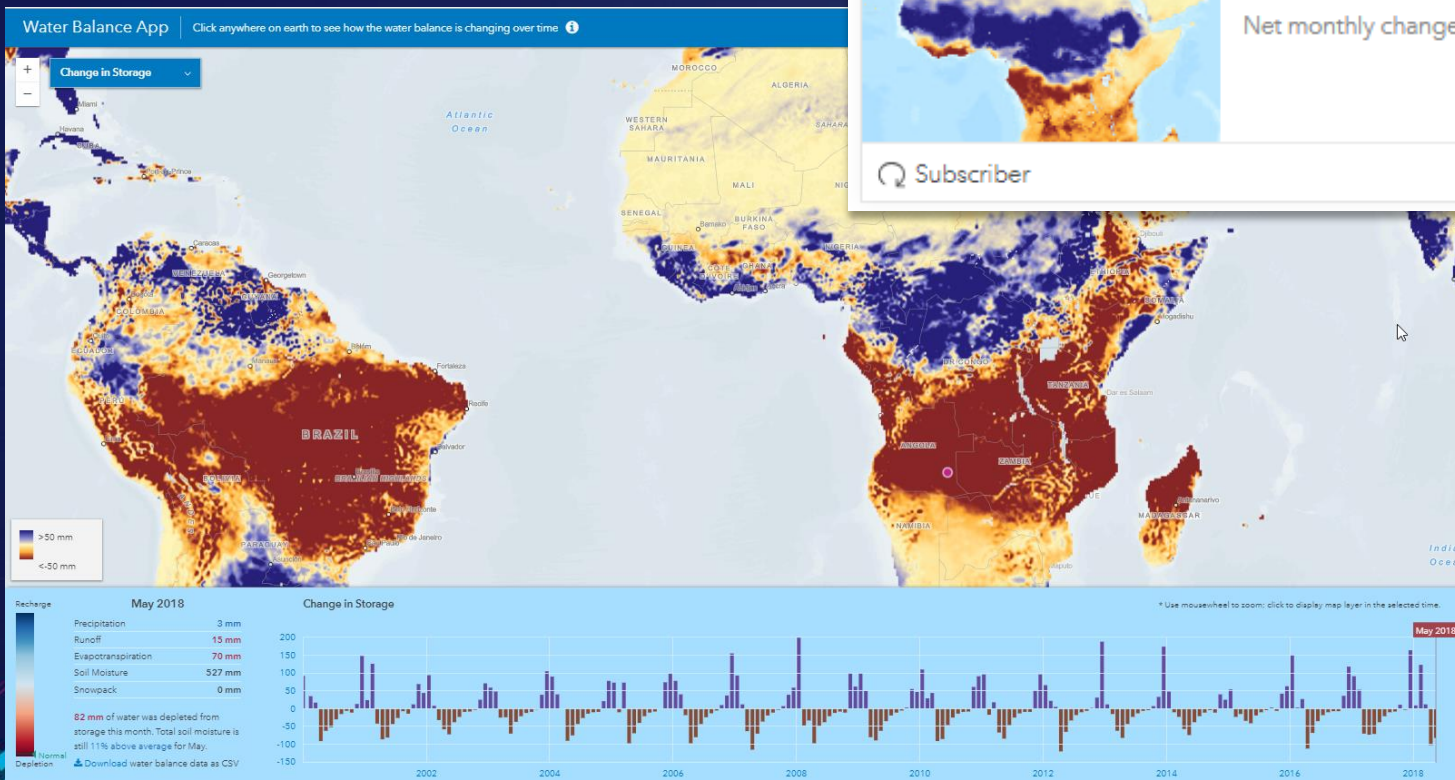
# New Services

## Evapotranspiration Image Service



# New Services

## Change in Storage



GLDAS Change in Storage 2000 - Present

Imagery Layer By: [esri](#)

Net monthly change in water storage modeled globally by NASA

Subscriber

Share, Star, More options icons



**What's Next?**

The background features a dark blue gradient with a faint, light-colored grid pattern. In the bottom corners, there are abstract, colorful geometric shapes in shades of red, orange, yellow, and blue, resembling stylized buildings or data structures. The overall aesthetic is modern and technological.

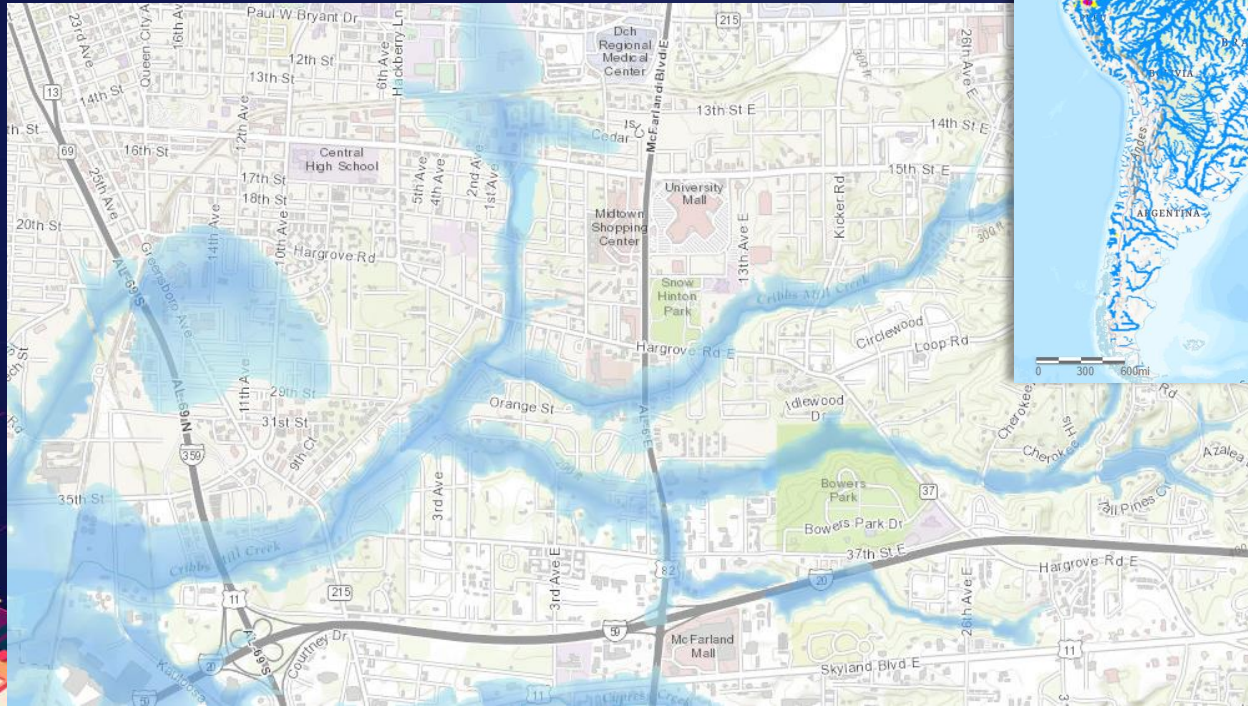
# What's Next?

World Hydro Basemap as Vector Tiles



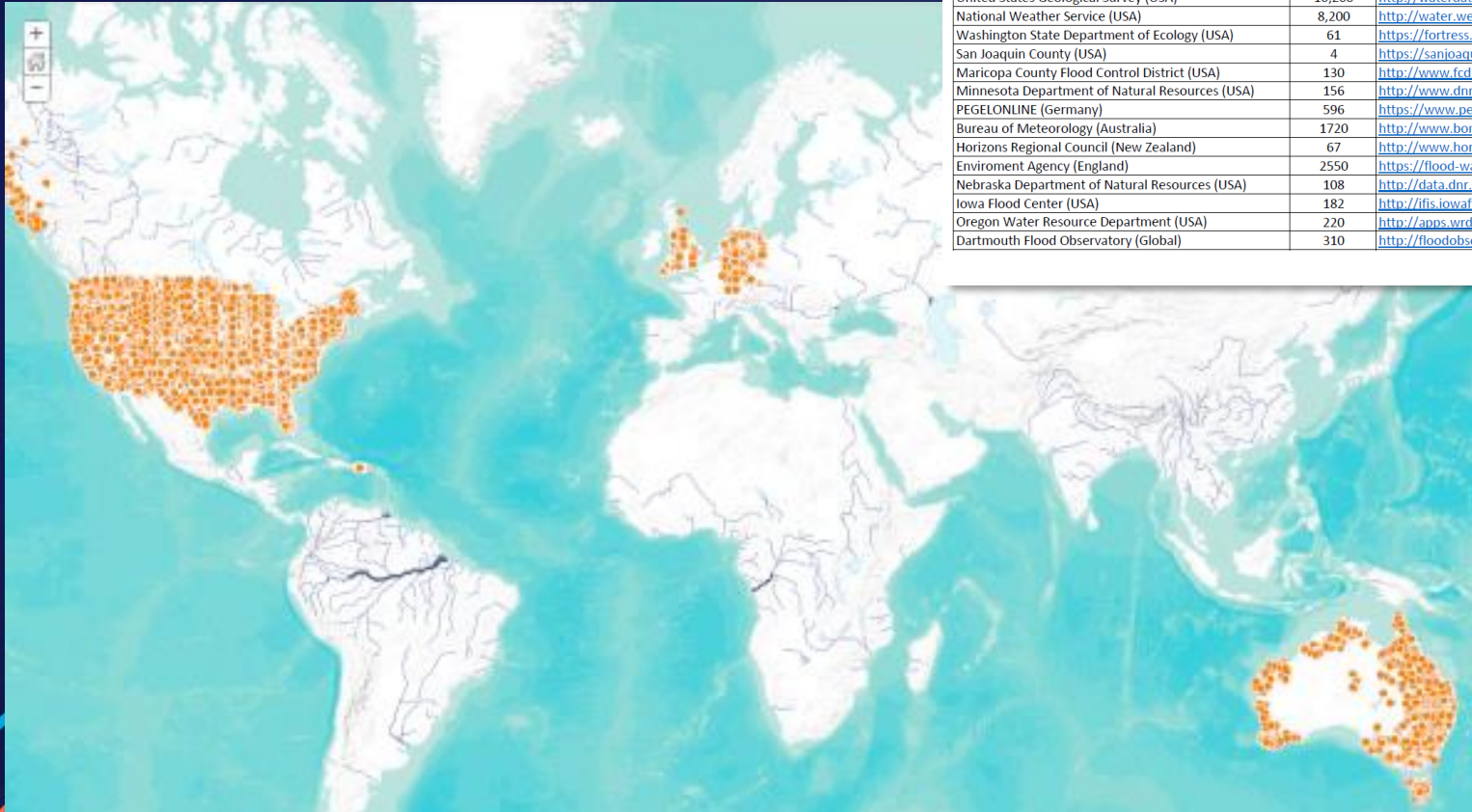
# What's Next?

(Inter)National Water Model



# What's Next?

## More Stream Gauges



### Live Stream Gauges Service Contributors

Organization	Number of Gauges	URL	Year
United States Geological Survey (USA)	10,200	<a href="http://waterdata.usgs.gov/nwis/rt">http://waterdata.usgs.gov/nwis/rt</a>	2014
National Weather Service (USA)	8,200	<a href="http://water.weather.gov/ahps/index.php">http://water.weather.gov/ahps/index.php</a>	2014
Washington State Department of Ecology (USA)	61	<a href="https://fortress.wa.gov/ecy/wrx/wrx/flows/regions/state.asp">https://fortress.wa.gov/ecy/wrx/wrx/flows/regions/state.asp</a>	2014
San Joaquin County (USA)	4	<a href="https://sanjoaquin.onerain.com/home.php">https://sanjoaquin.onerain.com/home.php</a>	2015
Maricopa County Flood Control District (USA)	130	<a href="http://www.fcd.maricopa.gov/Weather/Rainfall/streamflow.aspx">http://www.fcd.maricopa.gov/Weather/Rainfall/streamflow.aspx</a>	2015
Minnesota Department of Natural Resources (USA)	156	<a href="http://www.dnr.state.mn.us/waters/csp/index.html">http://www.dnr.state.mn.us/waters/csp/index.html</a>	2015
PEGELONLINE (Germany)	596	<a href="https://www.pegelonline.wsv.de">https://www.pegelonline.wsv.de</a>	2015
Bureau of Meteorology (Australia)	1720	<a href="http://www.bom.gov.au/waterdata/">http://www.bom.gov.au/waterdata/</a>	2015
Horizons Regional Council (New Zealand)	67	<a href="http://www.horizons.govt.nz/">http://www.horizons.govt.nz/</a>	2015
Environment Agency (England)	2550	<a href="https://flood-warning-information.service.gov.uk/">https://flood-warning-information.service.gov.uk/</a>	2016
Nebraska Department of Natural Resources (USA)	108	<a href="http://data.dnr.nebraska.gov/RealTime/">http://data.dnr.nebraska.gov/RealTime/</a>	2016
Iowa Flood Center (USA)	182	<a href="http://ifis.iowafloodcenter.org/ifis/">http://ifis.iowafloodcenter.org/ifis/</a>	2016
Oregon Water Resource Department (USA)	220	<a href="http://apps.wrd.state.or.us/apps/sw/hydro_near_real_time/">http://apps.wrd.state.or.us/apps/sw/hydro_near_real_time/</a>	2016
Dartmouth Flood Observatory (Global)	310	<a href="http://floodobservatory.colorado.edu/DischargeAccess.html">http://floodobservatory.colorado.edu/DischargeAccess.html</a>	2016

Contact: [streamgauges@esri.com](mailto:streamgauges@esri.com)



esri

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SCIENCE  
OF  
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# See Me Here

WORKSHOP	LOCATION	TIME FRAME
<ul style="list-style-type: none"><li>• Using Python for Data Updates to Web Services</li><li>• Best Practices for Publishing Services, Layers, and Maps</li><li>• Using the Living Atlas for Environmental Science</li><li>• Best Practices for Publishing Services, Layers, and Maps</li></ul>	<ul style="list-style-type: none"><li>• SDCC - Room 09</li><li>• SDCC – Room 10</li><li>• SDCC - Room 09</li><li>• SDCC – Room 02</li></ul>	<ul style="list-style-type: none"><li>• Tuesday - 10:00 to 11:00am</li><li>• Tuesday – 1:00 to 2:00pm</li><li>• Tuesday – 2:30 to 3:30pm</li><li>• Thursday – 4:00 to 5:00pm</li></ul>