ArcGIS Online Basemaps and Data Services

Tosia Shall gives an overview of the different types of basemaps available in ArcGIS Online.

http://video.esri.com/watch/1080/arcgis-online-basemaps-and-data-services

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Video Transcription

00:01 November 16th. Cold and raining. At NOAA, we met with two interesting groups…

00:06 …the Marine Chart Division, producing nautical charts, and the biogeography branch, creating additional data…

00:12 …scientific analysis and enabling management decisions. This is a typical formula for GIS projects.

00:18 Basemaps plus data plus analysis equals knowledge.

00:23 The Marine Chart Division has been making nautical charts since Thomas Jefferson in 1807, and today…

00:29 …they produce and maintain more than a thousand unique charts. This team of roughly a hundred people…

00:35 …are incredibly proud of their work, charting the US waters…

00:38 …and an area that's larger than all the landmass of the United States.

00:44 They share these with others, who employ them in areas like commerce, national security, and the environment.

00:50 Their work is about map production and automating the process to be as efficient as possible, and then…

00:56 …providing the charts using multiple delivery methods.

01:00 Part two of this visit is the biogeography branch, which builds on these charts and basemaps…

01:05 …with scientific data collection and analysis. These are the scientists that go into the field to create…

01:12 …the benthic habitat maps, and then overlay the fish census and other biological information.

01:18 With these high-quality information products, you can ask the hard questions, like…

01:22 …how are the coral reefs changing over time? Or how many fish inhabit an area?

01:27 And how effective are the management actions in this region?

01:32 In order to turn their analysis into actionable decisions, it often must be validated by the public...

01:38 ...and the public can then join into the decision-making process. As a result, for more than a decade...

01:44 ...the biogeography branch has been sharing their spatial content, first as printed maps and downloadable data...

01:51 ...then as data services, and today, more than a dozen different biomappers or web applications that help with ...

01:58 ...marine spatial planning. Working together, NOAA is charting and managing the health of our ocean resources.

02:09 Now, this typical formula--basemaps plus data plus analysis equals knowledge--is something that resonates with all of us.

02:18 So up next, how are we helping provide new content with basemaps and data services in ArcGIS Online?

02:26 Please welcome Tosia Shall.

02:31 Thanks, John. Let's start with a tour of the basemaps that you've made most popular.

02:38 This is the Topo basemap, and last year, over 250 million map tiles were requested from this map.

02:45 As I zoom into DC, you'll see the cartographic detail that changes with every scale.

02:52 Now, another popular basemap, just as popular as Topo, is Streets.

02:57 This one has a different cartographic look and feel, with a focus on transportation.

03:02 Another very popular basemap is World Imagery. Tiles from this high-resolution basemap have been requested...

03:09 ...over a 150 million times. But what's interesting about these three basemaps is not only are they the most popular...

03:17 ...but they are the ones to which you have been contributing through the Community Maps program.

03:23 So what's new in the basemap gallery?

03:26 In the past six months, we've added three new basemaps. Let's start by looking at the National Geographic basemap.

03:34 As you would expect, we have absolutely beautiful cartography at every scale.

03:40 I like to think of it as a digital equivalent to the maps we had hanging on our walls in classrooms as kids.

03:47 This map has very well-defined political boundaries.

03:55 And here you see the borders of the newest country in the world, South Sudan.

03:59 I can also get information on disputed areas, such as Somali land. Now let's take a look at our next new basemap, Oceans.

04:09 And what National Geographic was to land, Oceans is the waters.

04:15 As I zoom in to the Gulf of Mexico, you can see the beautiful detail that we have in the waters.

04:21 And those of you doing ocean-use planning may find it a nice option on which to overlay your data, such as…

04:27 …lease blocks and oil and gas wells. But sometimes you need a basemap that's a little bit more subtle…

04:33 …but will still give you that meaningful context. In this case, you might choose our Light Gray Canvas basemap.

04:41 This one provides a very nice amount of contrast between the background and your data.

04:47 I'd like to show you one final basemap, and that's OpenStreetMap.

04:52 This will be valuable in areas of the world where there might not be a lot of data, or areas that are changing rapidly.

04:59 This is OpenStreetMap over Homs, Syria. As construction or demolition or urban change takes place…

05:08 …contributors will post updates as they see them. So that's what's new in the basemap gallery…

05:13 …but I have plenty more content to tell you about. This year is the fortieth year of Landsat imagery collection.

05:22 And we've partnered with USGS to bring this to you through ArcGIS Online. How do you find it?

05:28 Do a keyword search on Landsat, and let's add a service to our map. What you're seeing here are…

05:38 …global land survey datasets from each of three epochs.

05:43 I'll zoom in to Loudoun County, which is west of DC, and the area that we're looking at is north of the Dulles Airport.

05:51 As I zoom the slider to 2005, those of you that live in this area won't be surprised to see the large amount of development.

05:58 But what did this area look like just 10 years before that? It had a lot more vegetation and a lot less hard space.

06:08 The important thing to remember about these services is that they are being served through Image Server.

06:15 And the benefit to you is that you can use them for analysis. I've added this service to ArcMap…

06:21 …and let's run an NDVI over this area to find where the healthy vegetation is, and those are the areas in bright green.

06:28 Of course, you can do many other kinds of processing on these services, such as classification.

06:34 But now I'd like to show you something new. It's a set of world elevation services that we'll be releasing soon.

06:42 To find them, you can do keyword searches, such as world DTM service…

06:53 …and let's choose the tinted hillshade to add to our map.

06:56 Nice. Let's zoom in to take a look at some detail. Not only are we serving the elevation and the hillshade…

07:08 …but also the slope, aspect, and digital surface models. And because these are image services…

07:16 …you can also use them for analysis. I've added the DTM and the tinted hillshade to ArcMap.

07:24 Let's run a line of sight from a hiker in the Olympic Park Mountains to the top of the Space Needle in Seattle.

07:31 And now let's take a look at the results in a profile graph.

07:35 Think about the value that you can add to your work by incorporating results from analysis such as these…

07:43 …and not have to store any data locally. That's pretty powerful. So look for these services this spring.

07:52 There's one final section of content that I have to share with you. In 2010, the Office of Management and Budget…

07:59 …released Circular A-16, which outlines a set of geospatial themes for the national spatial data infrastructure.

08:07 We've created a corresponding group, which you can find by doing a keyword search on A-16 in the Groups tab in ArcGIS Online.

08:16 And in the A-16 group, you will find hundreds of data layers that correspond to the themes in the circular.

08:23 We have also broken up these themes by topic, so for example, if you work in transportation GIS…

08:30 …you'll definitely want to check out the A-16 infrastructure group, which has dozens of layers, like…

08:36 …highways, railways, HAZMAT routes, and plenty of other content to support your work.

08:43 So I hope that this brief presentation has gotten you to think about some new ways to incorporate...

08:47 ...basemaps, image services, and data content in to the good work that you do.