



NORAD supported project in MRRD covering
Capacity Building and Institutional Cooperation in the
field of Hydrogeology for Faryab Province
Afghanistan

GIS Course 4.5 Practical Use of Online Maps

By Andreas de Jong
December 2014



PURPOSE OF THIS COURSE

The main purpose of this course is to:

- a) Introduce course participants to the practical aspects of creating online GIS maps using the ArcGIS Online utility.
- b) Create some example maps using Afghan data provided by participants.



KEY REFERENCES

ESRI ArcGIS Online: <https://www.arcgis.com/features/>

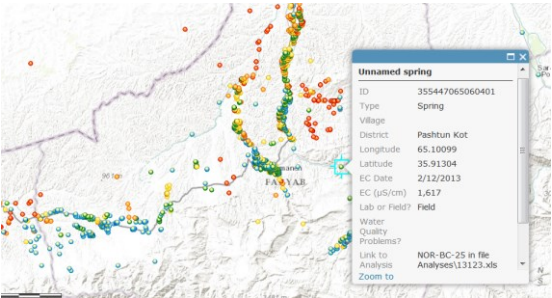
Documentation: <http://doc.arcgis.com/en/arcgis-online/index.html>

Online Training: <http://www.esri.com/training/main> &
<http://learn.arcgis.com/en/projects/get-started-with-arcgis-online/>

Blog: <http://blogs.esri.com/esri/arcgis/category/arcgis-online/>



EXAMPLE OUTPUT BY END OF COURSE

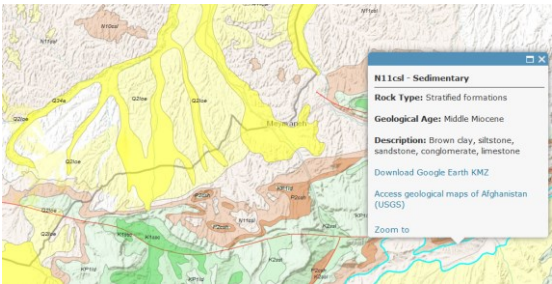


EC map of Faryab



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EXAMPLE OUTPUT BY END OF COURSE



Geology map of Faryab



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What you will need for this course



Internet (Fast!)



Internet Browser



MS Access



MS Excel



ArcGIS 10.0



A	B	C	D	E	F	G
1	What_c_wptCode	Type	Village	District	Longitude	
2	2018_551702005131501	Drilled borehole	Shah Dera	Shah Dera	65.22075	
3	2018_551702005131501	Drilled borehole	Shah Dera	Shah Dera	65.22080	
4	2018_551711000012803	Drilled borehole	Kashkara	Kashkara	65.25754	
5	2018_551711000012803	Drilled borehole	Kashkara	Kashkara	65.22075	
6	2018_551719005131302	Drilled borehole	Shah Dera	Shah Dera	65.22025	
7	2113_551711000012803	Drilled borehole	Kashkara	Kashkara	65.26294	
8	2113_551719000012803	Drilled borehole	Kashkara	Kashkara	65.26294	
9	2113_551719000012803	Drilled borehole	Kashkara	Kashkara	65.26294	

Your own data & coordinates



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Tentative Course Schedule

Day	Date	Activity
1	Tuesday 09/12/2014	Opening & Introduction
		Presentation: Practical use of Online GIS Maps
		Practical 1: ArcGIS Online – data management
		Practical 2: ArcGIS Online – point features
2	Wednesday 10/12/2014	Practical 3: ArcGIS Online – polygon & polyline features
		Workshop: Discussion on the practical implementation of online GIS maps in Afghanistan.
		Presentation of certificates



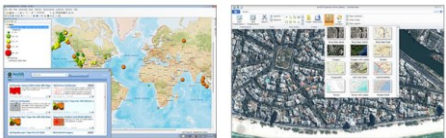
GIS Course 4.5 – Practical use of Online Maps

1. Review of ArcGIS Online
2. Practical tips for ArcGIS Online
3. Practicals



PART 1 – Review of ArcGIS Online

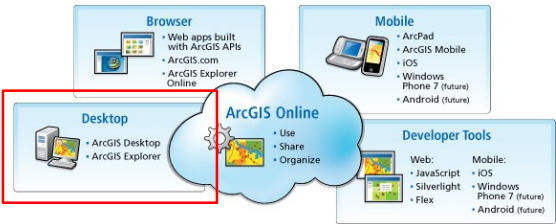
- With ArcGIS Online you can:
1. Upload and manipulate data
2. Map points, lines, and polygons
3. Create point and other thematic maps
4. Embed maps in web sites
5. Share maps and map layers in many ways



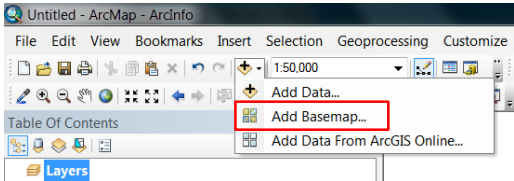
Source: <http://www.esri.com/uk/arcgis/online/overview>



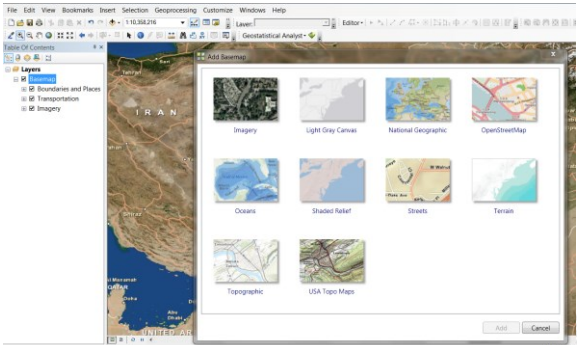
What is ArcGIS Online?



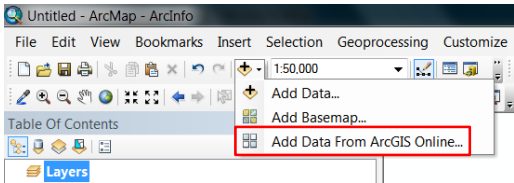
Access ArcGIS Online in ArcMap



Access ArcGIS Online in ArcMap



Access ArcGIS Online in ArcMap



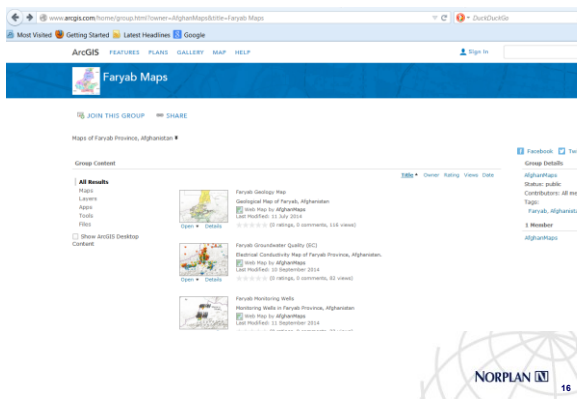
Access ArcGIS Online in ArcMap



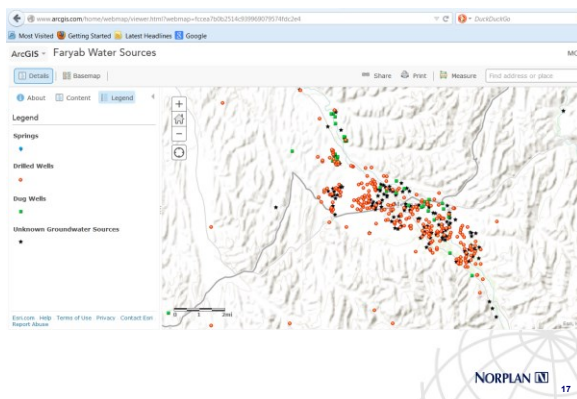
What is ArcGIS Online?



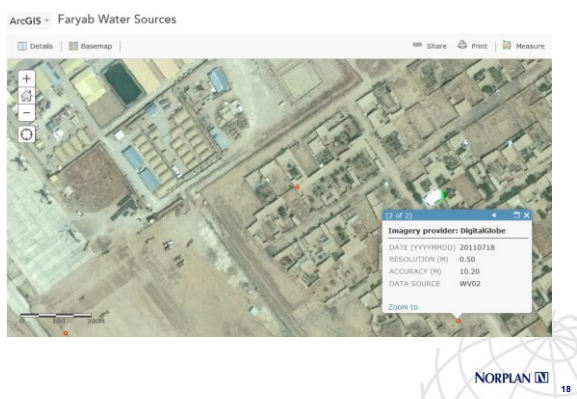
Access ArcGIS Online in your browser



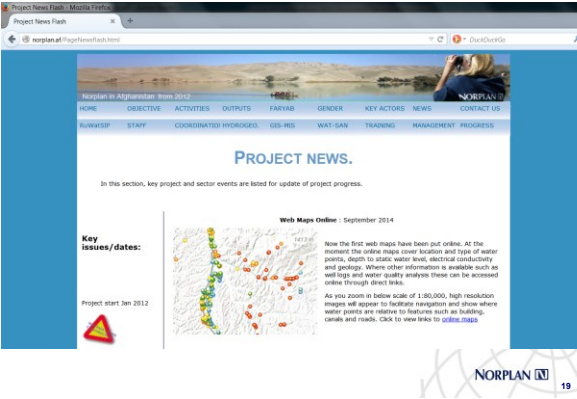
Access ArcGIS Online in your browser



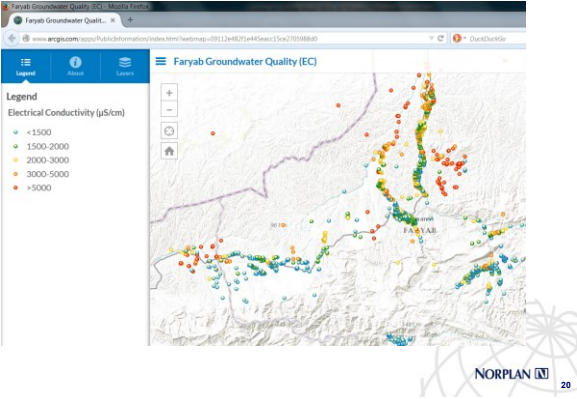
Access ArcGIS Online in your browser



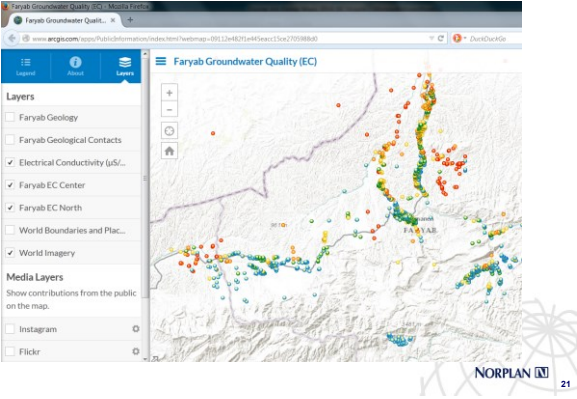
Access ArcGIS Online via a web site



Access ArcGIS Online via a web site



Access ArcGIS Online via a web site



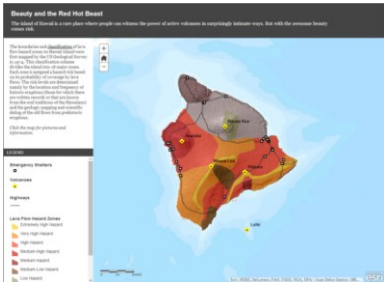
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Tip No. 1 : Lean ArcGIS Online Using the tutorial!

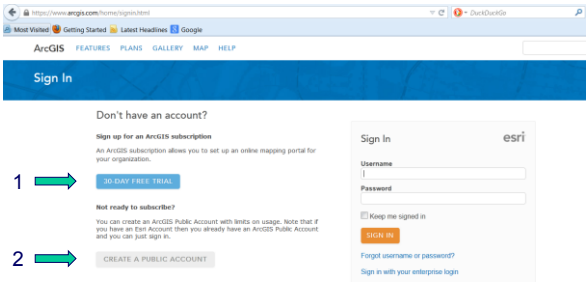


<http://learn.arcgis.com/en/projects/get-started-with-arcgis-online/>



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Tip No. 2: Open an ArcGIS Online Account



1

2

- 1. Subscription account (\$\$\$)
- 2. Public account



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ArcGIS Online accounts

	Subscription (Commercial and Non-Commercial Use)	Public Account (Non-Commercial Use Only)
	Free Trial Work Info >	Sign Up Free Work Info >
Access, share, and manage content	✓	✓
Add your own data to maps	✓	✓
Add Geometry Service to maps & apps	✓	✓
Store maps, apps, and data in Esri's cloud	✓	2 GB Limit
Create private groups	✓	
Make maps in Excel with Esri Maps for Office	✓	
Perform spatial analysis	✓	
Add World Geocoding to maps & apps	✓	
Add World Network Analysis to maps & apps	✓	
Access ArcGIS Portal and Web Mapping APIs	✓	
Publish hosted services in Esri's cloud	✓	
Manage user roles, access, and security	✓	
Monitor usage information	✓	
Add your organization's logo and banner to your ArcGIS Online homepage	✓	
Display your organization's maps on your ArcGIS Online homepage	✓	
Create a custom URL for your ArcGIS Online homepage	✓	
Includes Technical Support	✓	
	Free Trial Work Info >	Sign Up Free Work Info >

<http://www.esri.com/products/arcgis-online/features/compare-accounts>

NORPLAN 25

ArcGIS Online accounts – annual costs

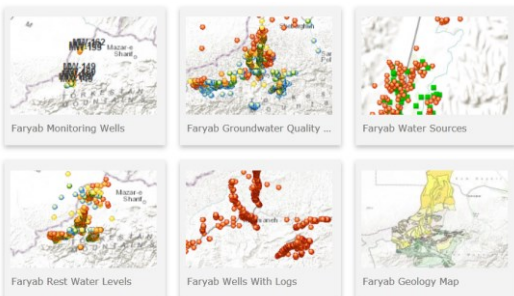
Subscription Plan	Users Included (up to)	Service Credits Included	Price
Level 1	5	2,500	\$2,500
Level 2	50	10,000	\$10,000
Level 3	100	17,500	\$17,500

Service	
Map Tile Generation	1 credit per 1,000 tiles generated
Feature Services Storage	2.4 credits per 10 MB stored per month
Tile and Data Storage	1.2 credits per 1 GB stored per month
Geocoding	40 credits per 1,000 geocodes
Simple Routes	0.04 credits per simple route
Optimized Routes	0.5 credits per optimized route
Drive-Times (Service Areas)	0.5 credits per drive-time
Closest Facilities	0.5 credits per closest facilities route
Multi-Vehicle Routes (VRP)	1 credit per multi-vehicle route
Demographic and Lifestyle Maps	10 credits per 1,000 map requests
Data Enrichment	10 credits per 1,000 data variables (attributes)
Infographics	10 credits per 1,000 views
Reports	10 credits per report
Spatial Analysis	1 credit per 1,000 features

Source: <http://www.esri.com/software/arcgis/arcgis-online/credits>



All online Faryab maps use a free Public Account



Find them in the **Faryab Maps** group



Source: www.norplan.af

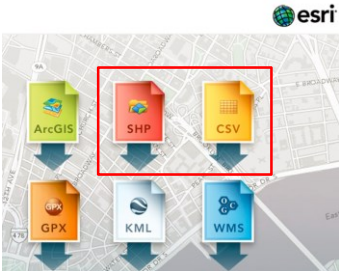


Tips for ArcGIS Online Accounts

- 3. Use a training account until you are "professional". These accounts are automatically deleted so there is no digital clutter left in the cloud.
<http://learn.gis.maps.arcgis.com/home/index.html>
- 4. Open a Public Account once you are "professional". It is free and can perform all the key functions you will need to make a map.
<https://www.arcgis.com/home/signin.html>
- 5. Give your Public account a sensible name so people know who you represent:
e.g. *RuWatSIP_maps*.

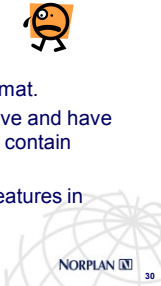


ArcGIS Online data types



Tips for using free Public Accounts:

- 6. You can upload a maximum number of 1,000 data points using latitude and longitude coordinates. These must be in decimal degrees.
- 7. You cannot upload rasters. Connect to WMS instead.
- 8. Be careful with date fields. They should be in the yyyy-mm-dd format.
- 9. Shapefiles should be in a zipped archive and have an uncompressed size of <10MB, and contain <1000 features.
- 10. An online map should have <10,000 features in total.

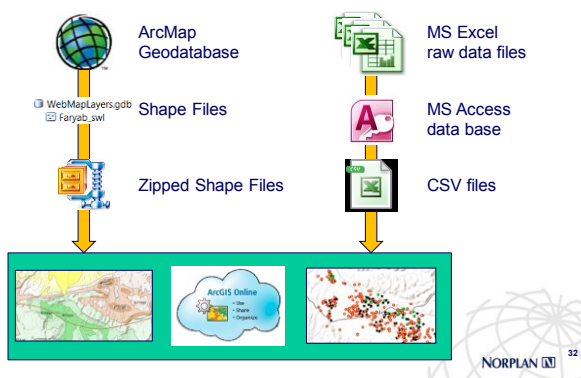


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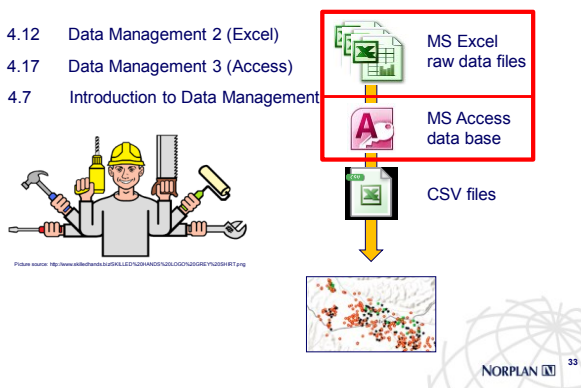


Practical 1: Data Management in ArcGIS Online



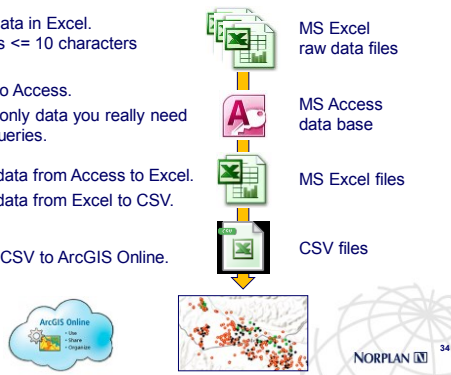
Practical 1 – Point data features – Skills needed:

- 4.12 Data Management 2 (Excel)
- 4.17 Data Management 3 (Access)
- 4.7 Introduction to Data Management



Point data features – Data Management

1. Clean data in Excel.
Headers <= 10 characters
2. Import to Access.
3. Extract only data you really need
using queries.
4. Export data from Access to Excel.
5. Export data from Excel to CSV.
6. Upload CSV to ArcGIS Online.



Practical 1 – Data Management for Point Features



Expected output:



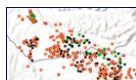
Clean CSV files



Practical 2 – ArcGIS Online Point Features



Expected output:



ArcGIS Online Map of point features



Practical 3 – ArcGIS Online Poly/line/gon Features



Expected output:



ArcGIS Online Map of polygon & polyline features



Workshop:

Discussion on the practical implementation of online GIS maps in Afghanistan



**Thank you
for your attention!**

