



# ArcGIS for the Military: Analyzing Environmental Impact On Operations

John Fry  
Erik Reid  
Matt Funk

# Understanding the environment is important to the success of the operation



Photo: Cpl J. Gage Karwick, USMC



Photo: U.S. Navy/Specialist 3rd Class Derek A. Harkins



Photo: U.S. Air Force/Senior Airman Jonathan Stefanko



Photo: Lance Cpl. Preston McDonald USMC



Photo: U.S. Air Force/Senior Airman Areca T. Wilson

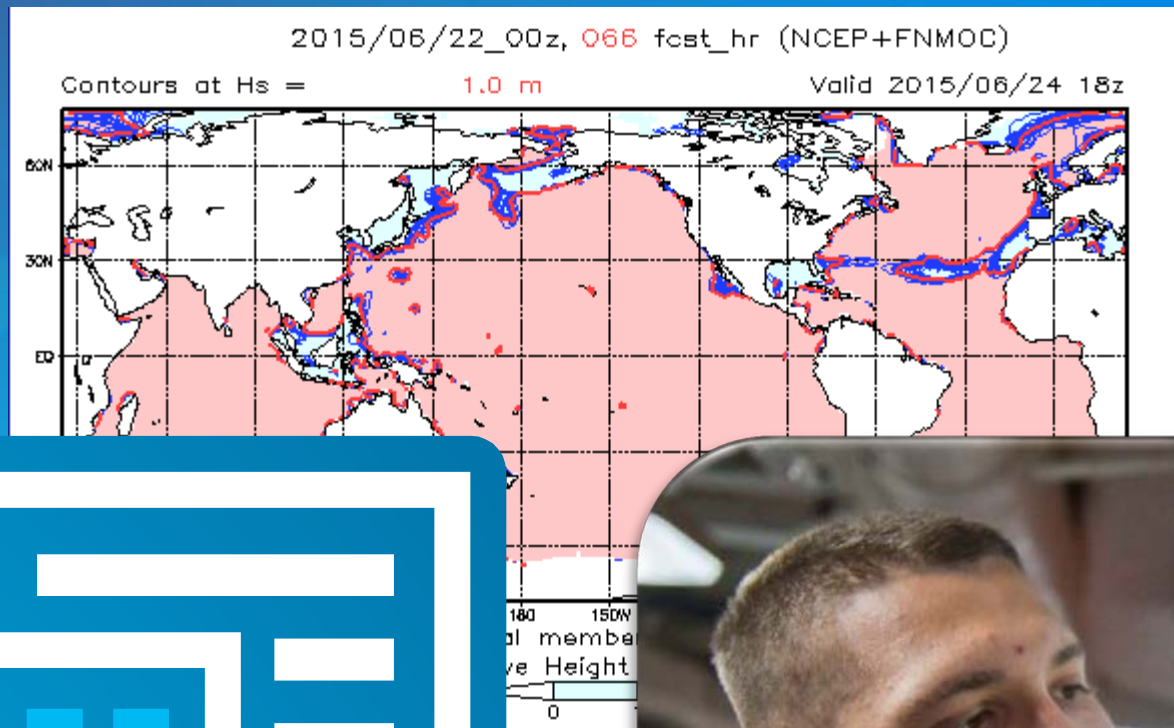


Photo: U.S. Navy/Specialist 3rd Class Christopher S. Johnson

## Explore Solutions



Local Government



State Government



Emergency Management



Utilities



Military



Intelligence



Telecommunications



Parks and Gardens

## Weather Effects on Operations

Weather Briefing

Current meteorological values are related to the effectiveness of different mission types. Locations are International Civil Aviation Organization (ICAO) weather stations.



### Current Weather Conditions

Current weather conditions for Afghanistan:  
Cloud Cover  
Temperature  
Wind speed and direction

### Air Defense

### Artillery

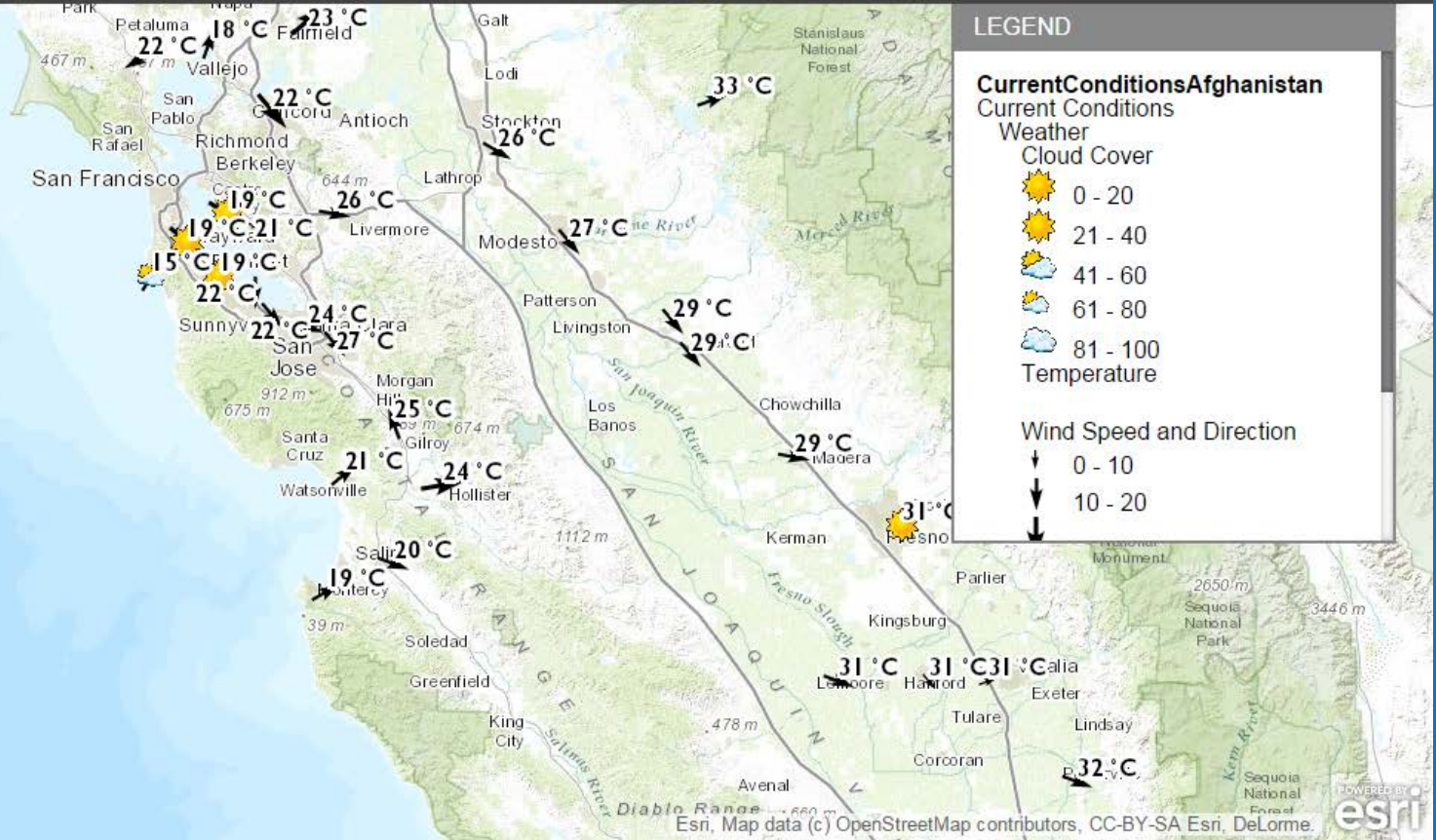
### Bridge Crossing

### Cross Country Maneuvers

### Parachute Drops

### Personnel

### UAV



... it's not an easy road

- Different data formats
- Workflow scalability
- Organizational challenges

Shapefiles

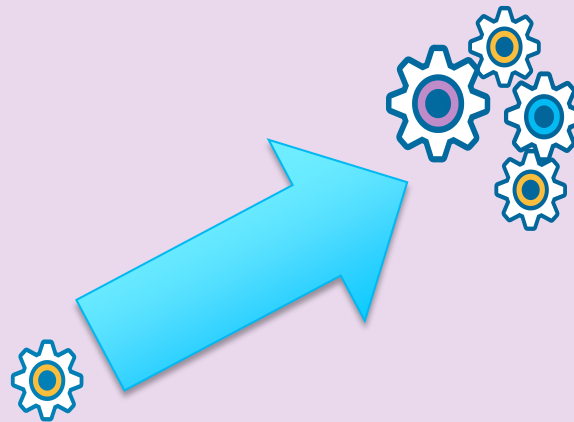
DTED

KML

OGC Map

CSV

**Net CDF**



**Analyzing Terrain**



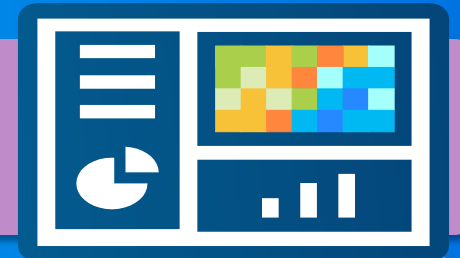
**Analyzing Weather**



**In the Field**



**In the Operations Center**





# Analyzing Terrain

Erik Reid



# Analyzing Terrain: Military Aspects of Terrain

1. Overview of Military Aspects of Terrain
2. Tools, Tasks, & Schema
3. Cover and Concealment Overview
4. Line of Sight Overview
5. Suitability Demonstration



Photo: Lance Cpl. Preston McDonald USMC

# Analyzing Weather

John Fry



# Analyzing Weather

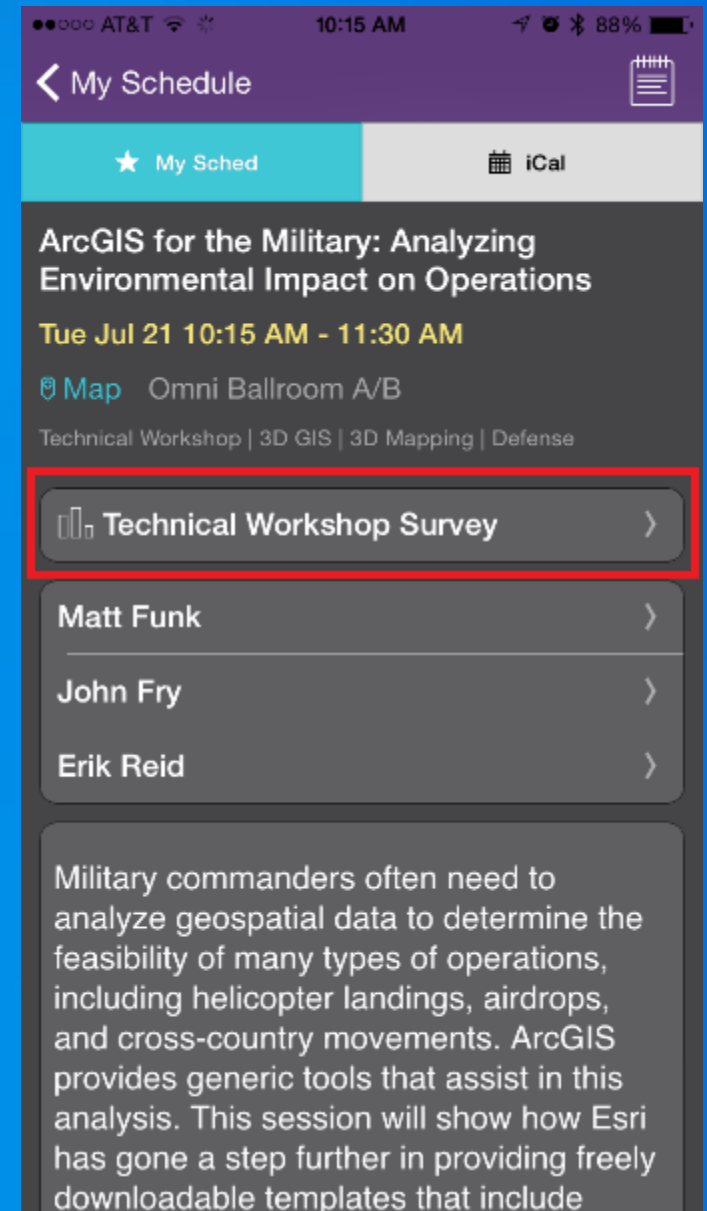
1. **Weather services in a Story Map**
2. **Military Aspects of Weather**
  1. **Climate,**
  2. **Current Conditions**
  3. **Forecasted Conditions**
3. **Web Apps for field collection**
4. **Operations Dashboard**



Photo: U.S. Air Force/Senior Airman Areca T. Wilson

# Thank you!

- Please fill out the session survey in your mobile app
- Select “Analyzing Environmental Impact on Operations” in the Mobile App
  - Use the Search Feature to quickly find this title
- Click “Technical Workshop Survey”
- Answer a few short questions and enter any comments
- For paper survey:
  - Title: Analyzing Environmental Impact On Operations
  - Presenters: Matt Funk, Erik Reid, John Fry
  - Offering ID: 1759



# Resources

- **Solutions Website**
  - <http://solutions.arcgis.com/military/>
- **GitHub**
  - <https://github.com/Esri>
- **Videos**
  - <http://video.arcgis.com/series/48/defense-and-intelligence/order/desc>
- **Blogs**
  - <http://blogs.esri.com/esri/arcgis/category/subject-defense/>
- **Facebook**
  - <https://www.facebook.com/Esri.Defense>
- **Twitter**
  - <https://twitter.com/EsriDefense>



Understanding our world.

# Photo Credits

## Slide 2:

Photo 140619-F-FU926-284.JPG

URL: <http://media.dma.mil/2014/Jun/27/2000804032/-1/-1/0/140619-F-FU926-284.JPG>

Accessed: 6/25/2015

Credits: U.S. Air Force photo/Senior Airman Jonathan Stefanko

Photo: 150622-N-TW634-478.JPG

URL: [http://www.navy.mil/view\\_image.asp?id=197914](http://www.navy.mil/view_image.asp?id=197914)

Accessed: 6/25/2015

Credits: U.S. Navy photo by Mass Communication Specialist 3rd Class Derek A. Harkins/Released

Photo: 140813-M-BC491-188.JPG

URL: <http://media.dma.mil/2014/Aug/15/2000812869/-1/-1/0/140813-M-BC491-188.JPG>

Accessed: 6/25/2015

Credits: Cpl J. Gage Karwick, USMC

## Slide 3:

Photo: 150311-A-NP785-004.JPG

URL: <http://www.navy.mil/management/photodb/photos/150311-A-NP785-004.JPG>

Accessed: 7/6/2015

Credits: U.S. Army/Sgt. 1st Class Matthew Chlosta

Photo: 121102-N-IC228-006.jpg

URL: <http://www.navy.mil/management/photodb/photos/121102-N-IC228-006.jpg>

Accessed: 7/6/2015

Credits: U.S. Navy photo by Lt. Cmdr. Corey Barker/Released

## Slide 4:

Photo: 150408-F-IT851-363.JPG

URL: <http://www.af.mil/News/Photos.aspx?igphoto=2001038338>

Accessed: 6/25/2015

Credits: U.S. Air Force photo/Senior Airman Areca T. Wilson

Photo: 150528-M-OD001-093.JPG

URL: <http://media.dma.mil/2015/Jun/03/2001052008/-1/-1/0/150528-M-OD001-093.JPG>

Credits: Lance Cpl. Preston McDonald USMC

Accessed: 6/26/2015

## Slide 5:

Photo: 120728-N-VY256-084.jpg

URL: <http://www.navy.mil/management/photodb/photos/120728-N-VY256-084.jpg>

Accessed: 7/6/2015

Credits: U.S. Navy photo by Mass Communication Specialist 3rd Class Christopher S. Johnson/Released

## Slide 7:

Photo: IMG\_0667.jpg

Credit: Esri/Matt Funk

## Slide 9:

Photo: IMG\_0641.jpg

Credit: Esri/Matt Funk