Using ArcGIS for Intelligence Analysis

Suzanne Foss and Mary Clawson
Workshop Goals

- ArcGIS as platform for defense and intelligence
- Geographic approach as a methodology to support intelligence analysis
- How to use tools and templates
- Methods for collaboration and sharing
GIS is a Platform for Problem Solving

Supporting Individuals, Groups, Organizations, and Communities

Integrating and Synthesizing Information from Many Sources

Facilitating Communication and Collaboration

Breaking Down Barriers Between Institutions, Disciplines and Cultures

Becoming an Essential New Language for Understanding
A New Pattern Is Emerging

An Intuitive Platform For Sharing, Discovery, Access and Use

Cloud GIS

Knowledge Workers
Managers
Policy Makers
Casual Users

Geospatial Professional

Creating an Online Collaboration Framework
ArcGIS Portal

A Platform for Content Management & On-Demand GIS

Cloud / Web

Intelligent Web Maps

... Easy, Accessible And Self Service
GIS Is Not Your Mission

I do threat assessment research

I do imagery analysis

I support military operations
Process of Intelligence Analysis

- Step 1: Frame the Question
- Step 2: Collection - Find Data and Tools
- Step 3: Examine and Investigate
- Step 4: Analysis
- Step 5: Disseminate
The Geographic Approach & Spatial Thinking

Can You Think Spatially?

- Pattern Recognition
- Proximity and Spatial Distances
- Space and Time
- Overlays
- Workflows & Modeling
- Multi-dimensions
- Uncertainty and Sensitivity
- Connectivity and Interaction
- Scale
Process of Intelligence Analysis

- **Step 1:** Frame the Question
- **Step 2:** Collection - Find Data and Tools
- **Step 3:** Examine and Investigate
- **Step 4:** Analysis
- **Step 5:** Disseminate
Step 1: Direction and Framing the Question

What is the Intelligence Problem?

- What is the intelligence problem I am working on?
- Where do I focus?
- What aspects of the geography provide context?
Step 2: Collection—Finding Data and Tools

What information is available?

- Maps, Data and Services
- Non-standard data/ Unstructured Data
- Local flat file
- Collect new data
Demo
Data Collection
Suzanne Foss
Step 3: Examine

What is the relevance and reliability?

- Is this a reliable source?

- Will this help answer the question at hand?

- Has this information been used by others for similar scenarios?

- What is the best way to access this data?
Example of a good description

Conflicts - Features

This map depicts locations of conflicts in Mali from 1997 to 2010.

Description

Depicts locations of conflicts in Mali over the time period 1997 - 2010. Locations are approximated to the town location, or to the region's primary town if a placename could not be located.

Data obtained from the Armed Ethnic Conflicts Location Database (http://www.aedddata.com). Conflicts are symbolized two ways: with a standard marker symbol, and also symbolized according to event type, including:

- Battle - Rebels overtake territory
- Battle - No change of territory
- Battle - Government regains territory
- Violence against civilians
- Riots/Protests
- Non-violent activity by a conflict actor
- Non-violent transfer of territory

Conflict actors include the Government of Mali, the Police Forces of Mali, Al-Qaeda (AQIM), the Tuareg Ethnic Militia, the Tuareg Alliance of North Mali for Change (ATNMC), and the Democratic Alliance of 23rd May for Change (ADC), among others.

Access and Use Constraints

Comments (1)

mgclawson (July 18, 2012)

This is the best source for historic conflicts.

Add a Comment
Step 4: Analysis

What kind of analysis do I need to do?

- Is locating observation points important?
- What’s the proximity to large cities?
- What are the trends in the data?
- Is the clustering of data significant or an artifact of the sources?
Step 4: Analysis

What will help solve the intelligence problem?

- 750+ Tools in ArcGIS
  - 130+ New Geoprocessing Tools

Dynamic Mosaic Imagery
On-the-Fly Analysis

- Location / Allocation
- Time-Aware
- Overlay Modeling
- Mensuration
- Integrates Video (FMV)
- New In 10.1
Demo
GIS Analysis
Suzanne Foss
Step 5: Dissemination

Organizing Distributed Data and Services

Allowing for timely and efficient collaboration and sharing
Step 5: Disseminate Analysis

Automating Repeatable Workflows

New at 10.1 Geoprocessing & Locator Packages

Tradecraft Modeling
Demo
Sharing and Collaborating
Suzanne Foss
Key Takeaways

• GIS supports the intelligence analysis workflow

• ArcGIS Portal enables search, discovery, and collaboration of geospatial content

• New Tools in 10.1 will better enable geospatial analytics in the hands of non-GIS experts
Steps to evaluate UC sessions

- My UC Homepage ➔ “Evaluate Sessions”
- Choose session from planner
  OR
- Search for session

www.esri.com/ucsessionssurveys
• Thank you for attending
• Have fun at UC2012
• Open for Questions

• Please fill out the evaluation:
  www.esri.com/ucsessionsurveys

  Workshop ID: 1749