

# Wildland Search and Rescue with



# Goals of the seminar

- How SAR and Public Safety can benefit from using GIS
- Introduce MapSAR
- How MapSAR fits in with ICS ops



# Why MapSAR?

- Maps are key to SAR missions
- Limitations of current methods
- New mapping/geospatial technology (GIS)
- **Benefits**
  - Time
  - Resource Management
  - Archival/History



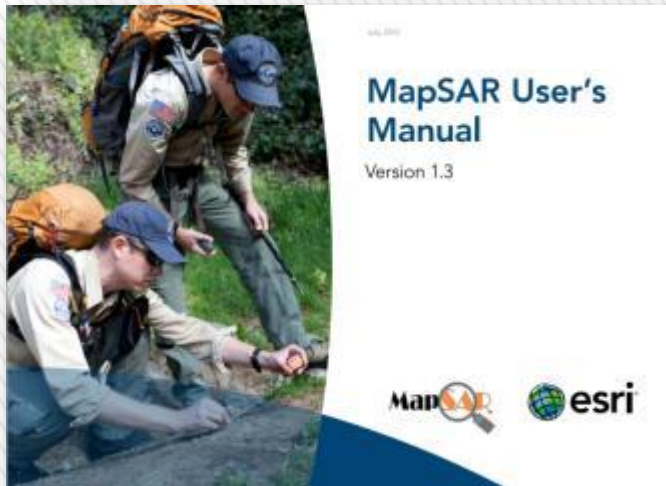
# How MapSAR can help

- Create and edit field task assignments
- Monitor progress of assignments
- Support logistics/communications
- Document clues, team location and status
- Incorporate GPS data
- Store all incident data into a single repository
- Create and print maps



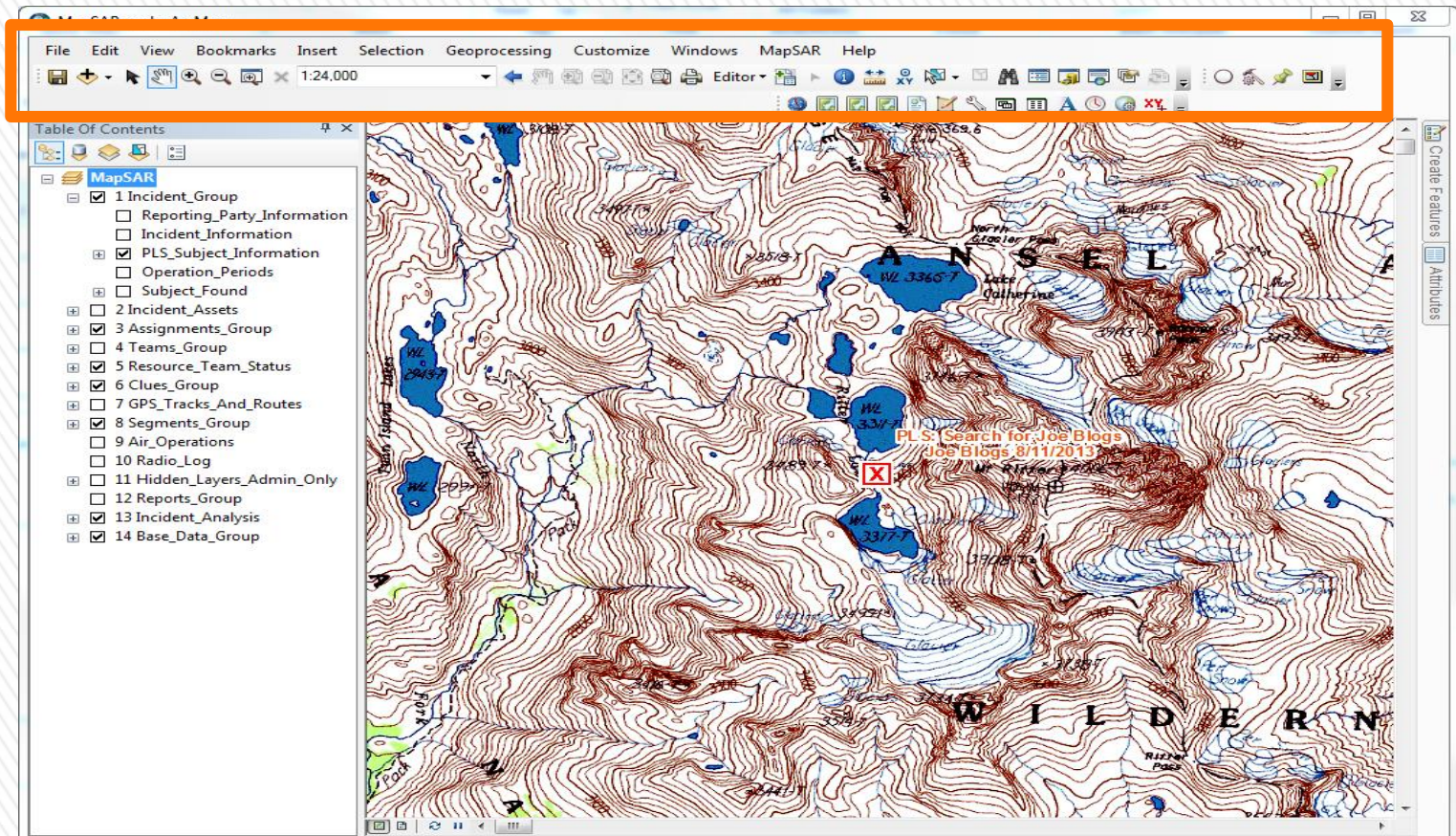
# What makes up MapSAR

- GIS software from Esri
  - Esri supports SAR teams (501c3 non profits)
- SAR-specific add-ons to software
- Training manuals, webinars, videos



# MapSAR software

- ArcGIS for Desktop + Free template
- Toolbar, Data Model, and Symbols



# MapSAR creates dynamic maps

- Stores your local data in “layers”
- Maps are dynamic... showing only what you need
- Stores data that describes the map locations



Attributes

Clues\_All  
Found by

Clue #	1
Relevancy	Relevant
Assignment #	<Null>
Team Name	<Null>
Date	9/10/2013 9:42:29 AM
Object Found	<Null>
Location Found	<Null>
Verbal Description	<Null>
Source	Hand Drawn
Lat_WGS84	37.697455
Lon_WGS84	-119.234624
UTM_Easting	302991.0935
UTM_Northing	4174597.2096
Comments	<Null>



# MapSAR prints maps

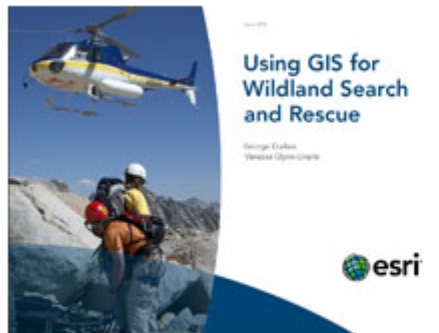
- Assignments
- Briefing
- Planning
- Operations
- Logistics
- Media





# MapSAR maintains your data

- Your local data
  - Trails and trailheads, landing zones, streams, roads, ridges...
- Helps keeps your data
  - Organize, up-to-date, portable, and accessible



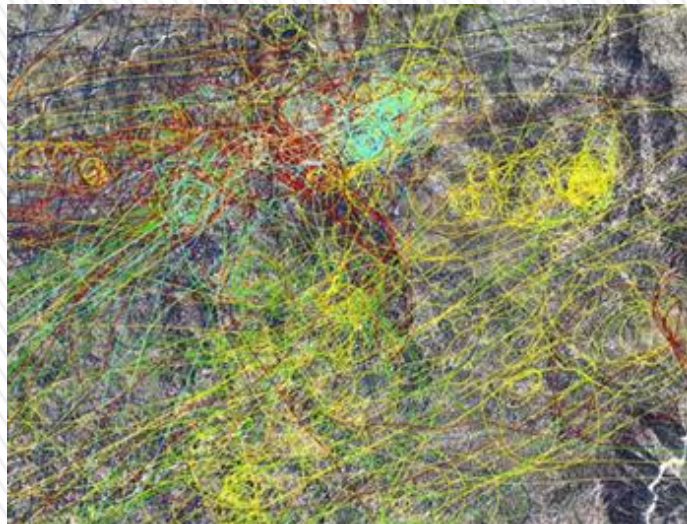
## ***Using GIS for Wildland Search and Rescue***

[Download the ebook](#)

Using GIS for Wildland Search and Rescue is intended to be the core instruction manual for developing a working knowledge of all things GIS for every team member. It includes sections on Why GIS; Understanding and Using Coordinate Systems; Using ArcGIS Explorer Desktop for Situational Awareness and Basic Incident Management Tasks; and Integrating GPS and Current Technologies into SAR Operations. Easy to follow tutorials and data sets are provided to achieve these skills and understanding GIS concepts.



# But who needs that?

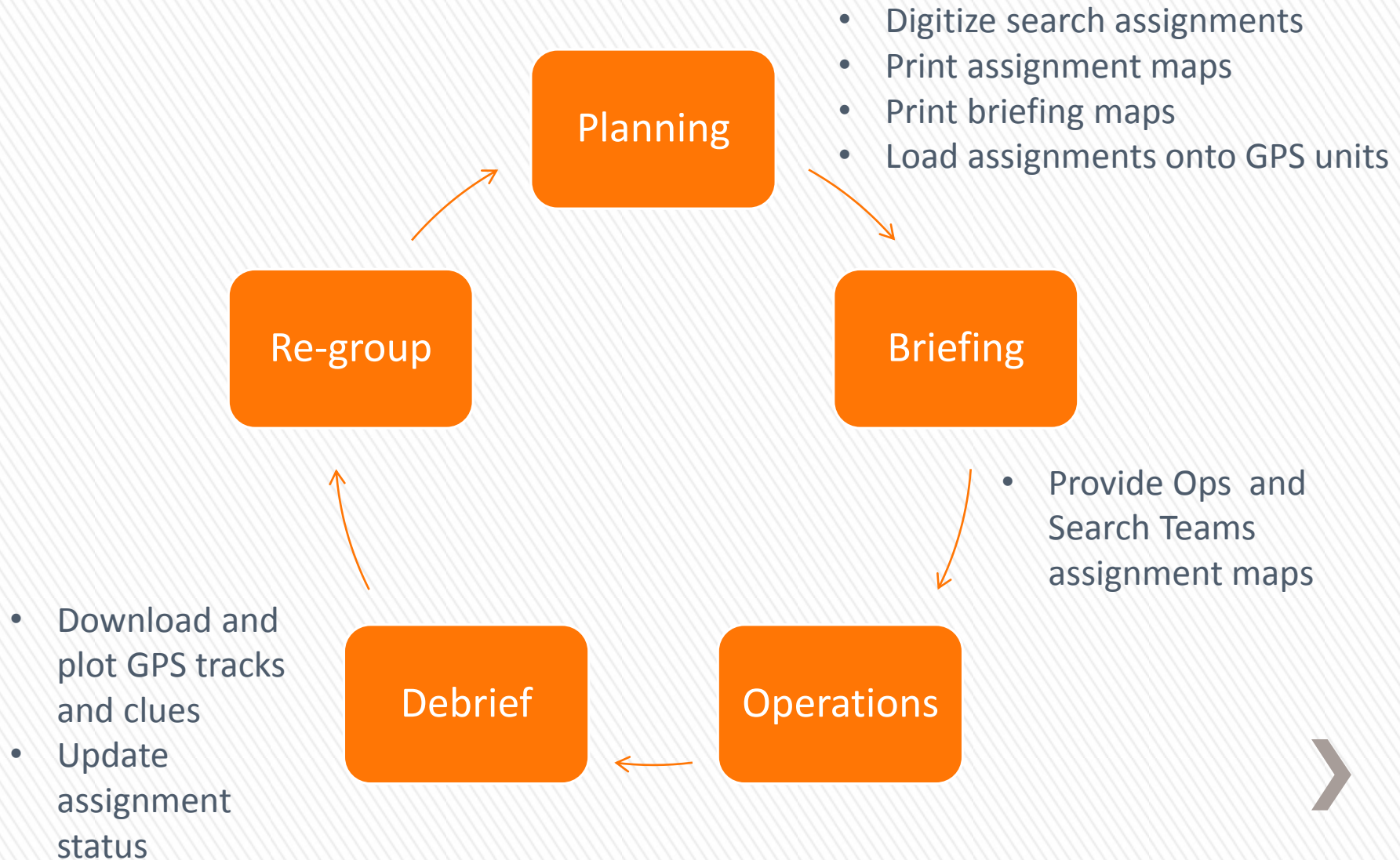


# A typical SAR mission

- **First Operational Period**
  - You probably haven't opened your laptop
- **Additional Operational Periods**
  - Now we're up all night planning
- **After the search, debrief**



# The role of MapSAR in ICS



# First tasks for MapSAR

- Describe incident and subject
- Locate and plot PLS on map
- Create briefing maps
- Create team assignments
- Create task assignment forms
- Print team maps
- Get the teams on there way!



# During the Incident

- Operations
- Update assignments
- Clue tracking
- Reports
- Logistics/Communications
- Plans creates assignments and prints maps
- Define search segments/areas
- New briefing map
- Teams and member check-in



# Loading and Collecting from GPS

- GPX
- KML
- Tools...

Terrain NavPro

Garmin Basecamp (Free)

DNR Garmin (Free)



# After the search

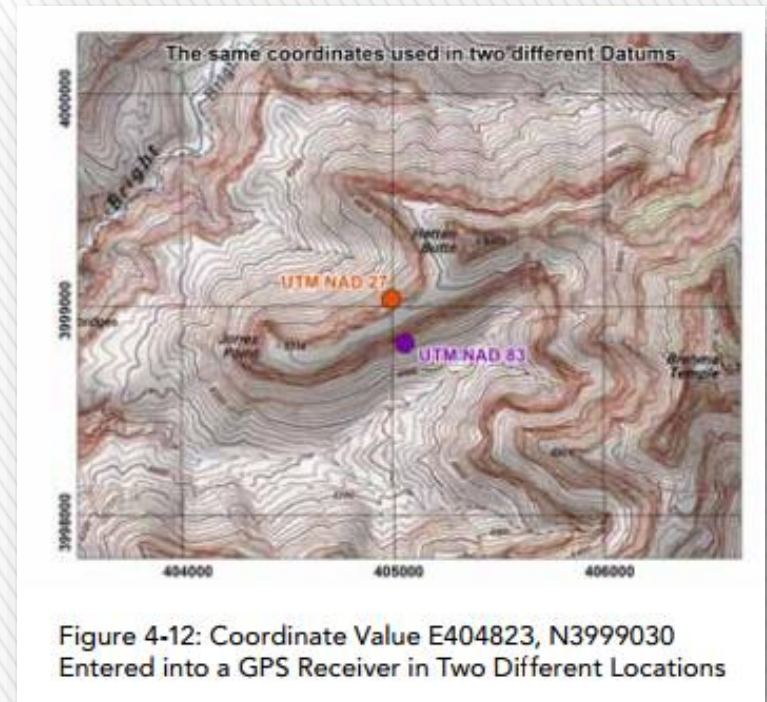
- Debrief/Media materials
- Archive
- Database saved for historical reference





# Datums and Coordinate Systems

- Localize MapSAR to your area and preferred datum
- NAD27
  - Found on old TOPOS
- NAD83\*
  - NPS standard
- WGS 84\*
  - GPS units



# What... No internet?

- Working offline
- Base Data (MED)
- Simple needs...electricity, laptop, printer
- No printer...PDFs can be transported
- Keeping your 'stuff' ready to deploy



# Your next steps

- Get software
- Visit [MapSAR.net](http://MapSAR.net)
- Remote support
- Join Google Group
- Esri Online Training  
<http://training.esri.com>
- Videos hosted by NAPSG



The screenshot shows the MapSAR website header with the logo and navigation links: eBooks, MapSAR, Forum, Resources, and Contact Us. Below the header is a large photograph of search and rescue team members in a rugged, rocky terrain. One person is kneeling and looking at a map or device, while others stand around. Below the photo is a section titled "GIS for Wildland Search and Rescue" with a sub-section "Life Saving Maps" and a video player icon.

**MapSAR** eBooks MapSAR Forum Resources Contact Us

**GIS for Wildland Search and Rescue**

**Life Saving Maps**

Maps are at the core of any Search and Rescue (SAR) operation. Geographic information system (GIS) software allows rescue personnel to quickly generate maps that depict specific aspects of the operation and show what is happening on the ground over time. The maps and operations data can be shared over a network to supply an enhanced common operating picture throughout the Incident Command Post (ICP).

A team of GIS and SAR professionals from Sierra Madre Search and Rescue Team, Esri, Sequoia and Kings Canyon National Park, Yosemite National Park, Grand Canyon National Park, and the Mountaineer Rescue Group came together to develop the tools and instructions to fit established SAR workflows. The goal is to meet the critical need to provide standards, documents, and training to the international SAR community and establish more widespread and effective integration of GIS into operations.



# Resources

- [www.mapsar.net](http://www.mapsar.net)  
[help@mapsar.net](mailto:help@mapsar.net)
- [www.youtube.com](http://www.youtube.com)  
<http://www.youtube.com/channel/UCrWNjhnpNOiEAA TDzNw3IFg>
- WiSAR – Wildland SAR  
<http://wisarandgis.blogspot.com/>
- Google Group - GIS for SAR  
[sar-and-gis@googlegroups.com](mailto:sar-and-gis@googlegroups.com)

