NM TES and TEUI-Geospatial Toolkit

Steve Strenger

Nori Koehler

November 28th, 2007

Overview of TES

Gila National Forest
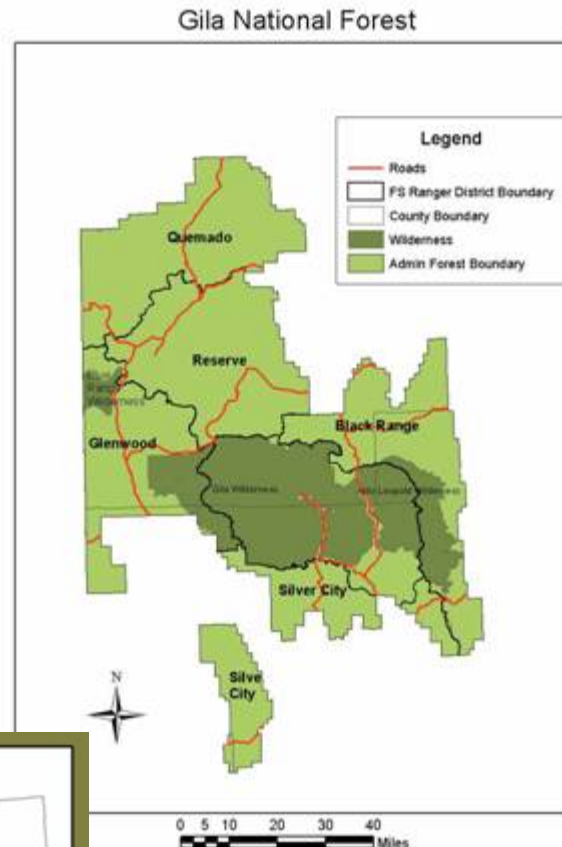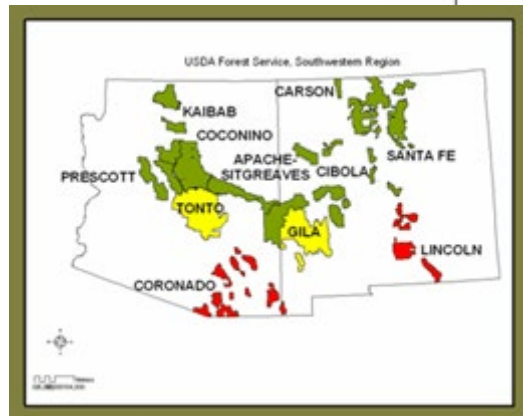
- **Terrestrial Ecosystem Survey**
- **TES:** systematic examination, description, classification and mapping of terrestrial ecosystems
- **R3 TES:**
  - 11 national forests
  - 3 national grasslands
- **Current mapping crews**:
  - Tonto NF TES
  - Gila NF TES
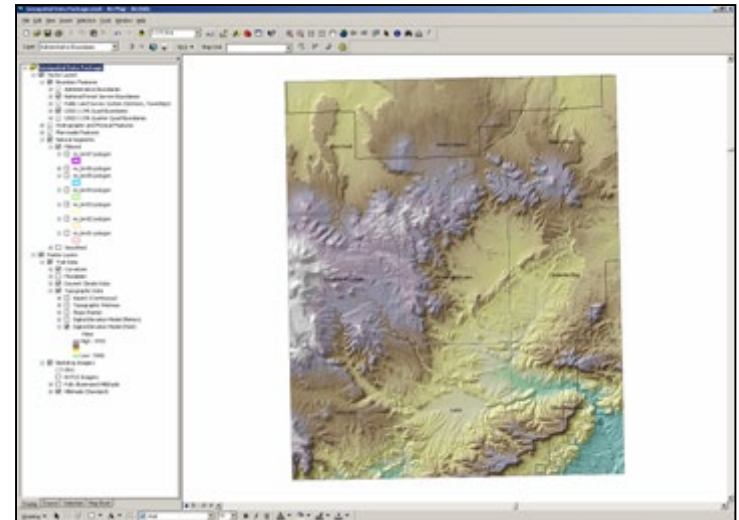
New Methods of Mapping

- **Previously**:
  - 1:24,000 aerial photos w/delineations
  - Transfer line work to orthophoto base maps
  - Send orthophotos to be digitized
 - Return for edits and corrections
- **Transitioning into new methods**:
  - TEUI-Geospatial Toolkit
  - 1:24,000 aerial photos still used in field

# What is the TEUI-Geospatial Toolkit ("Toolkit") ?

- **ArcMap extension developed by RSAC**
- **Four main points**:
  - Data provisioning
  - Landscape visualization
  - Landscape stratification
  - Landscape analysis
- **Key features**:
  - Request data for survey area ("datastack")
  - View data in different formats
  - Stratify landscape
  - Develop initial map unit concept
  - Edit, update, and reclassify initial map unit concepts through map unit validation process
  - Legend development
  - Generate field maps
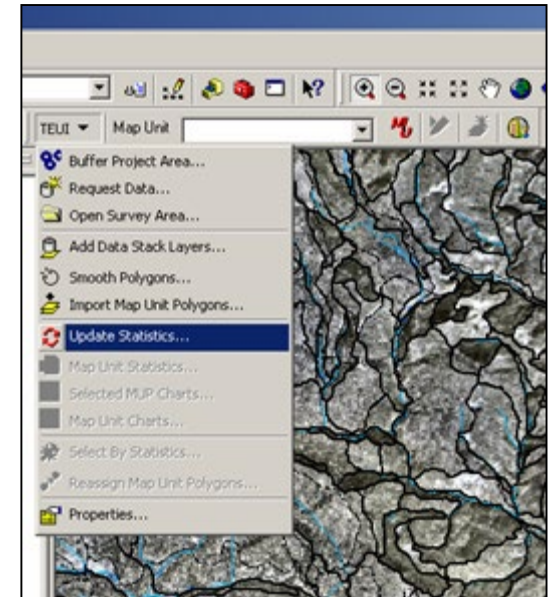
Data Provisioning
What data <u>can</u> we use?

- **"Datastack"**
  - Landsat 5 TM and 7 ETM+ derivatives
  - Daymet climate data
  - NED derivatives
  - DOQ's and DOQQ's
- **Natural segments**
  - Developed from eCognition
  - Many different levels of segmentation provided
- **Vector data**
  - **Local data**
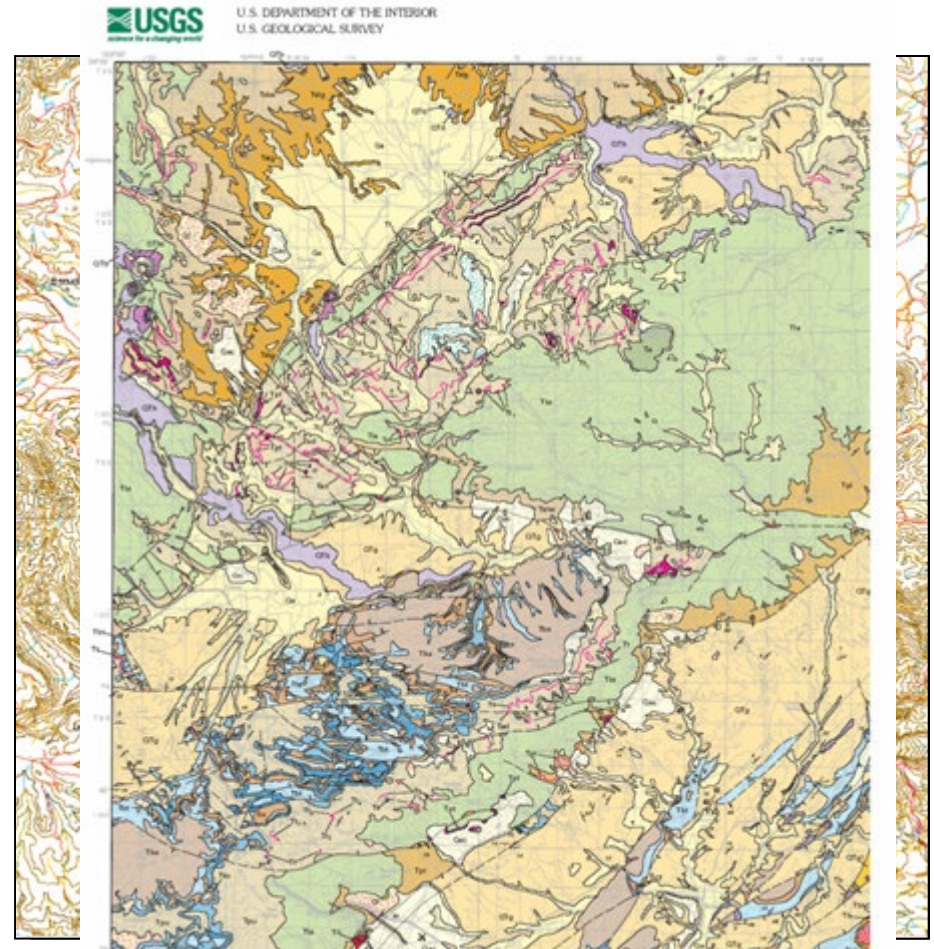
Data Provisioning
What data <u>are</u> we currently using?

- **"Datastack"**
  - Contours
  - Fully Illuminated Hillshade (Trishade)
  - ETMDOQ
  - Aspect
  - Slope
- **Natural segments** – usually "level 3"
  - eCognition given weights for the following layers:
    - 10 meter elevation
    - 10 meter continuous slope
    - All bands of 10 meter trishade
    - All bands of 10 meter ETMDOQ
  - Also given weights on factors like color, shape, smoothness, compactness
  - "Level 3" specific combination – average object ("polygon") ~65 acres
  - Happily, its all done by the kind people at RSAC!
- **Vector data**
  - Transportation
  - Water bodies, streams, etc.
  - Used more in field map generation

Landscape Visualization and Stratification

*How are we using the "toolkit"?*

- First we look at the data:

  - What segmentation level looks like it works overall?
  - Would another level work better in other areas?

- Edit!

  - Toolkit provides efficient ways to quickly digitize and clean/build topology without being an ArcMap "expert"

- Out to the field…

  - Check polygons
  - Edit when necessary

- Back to the computer to edit again
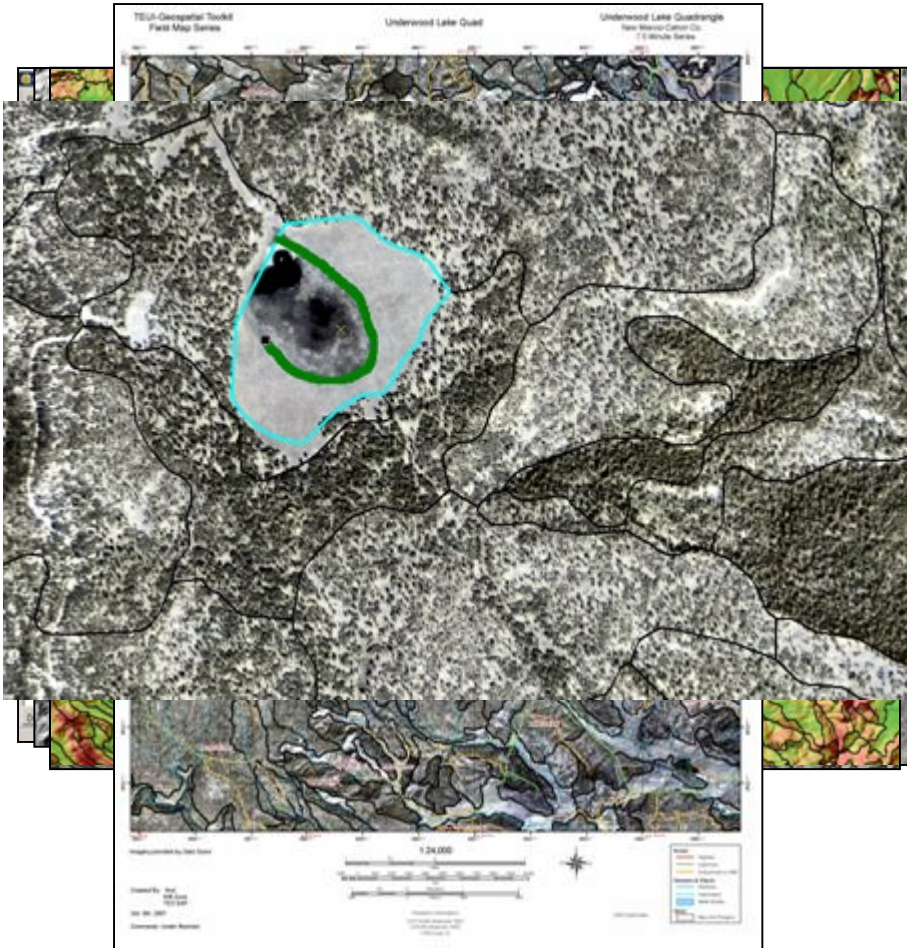
Landscape Analysis
What else can the "Toolkit" do?

○ Identify "outlier" polygons using built-in statistical analysis

- Using attributes like slope, aspect, elevation, etc.
- Compare range within polygon
- Compare range with other polygons inside same map unit
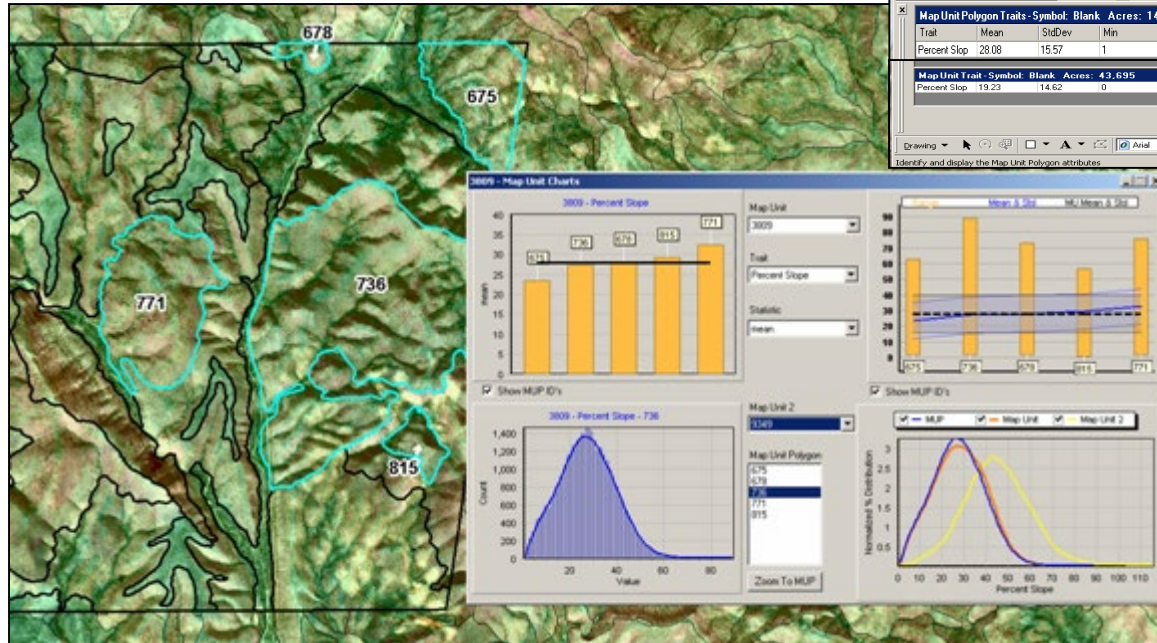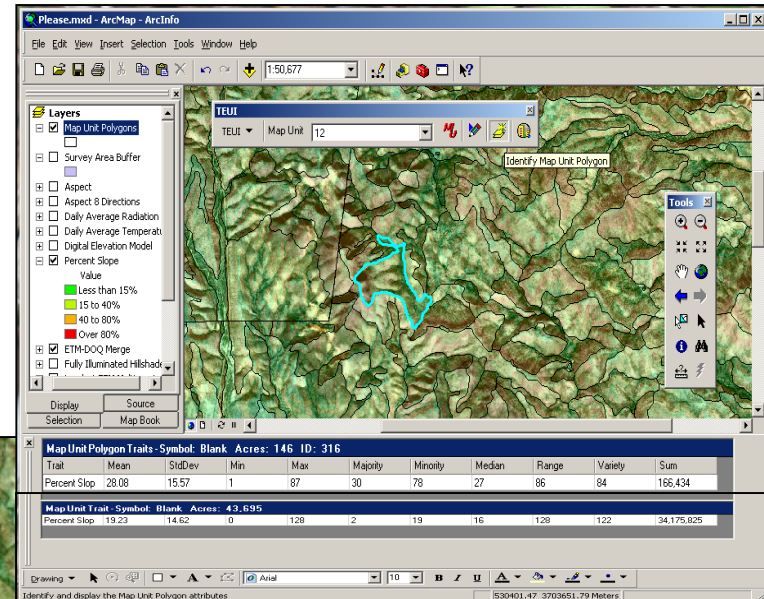
○ Go out in field and perform a "field check"

○ Reassign polygon, edit lines, or change/add map unit description if documentation supports

References

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Contact Information

Steve Strenger: Supervisory Soil Scientist/NM TES Crew Leader
Ecosystem Analysis & Planning
Terrestrial Ecosystem Survey
Phone: (505) 842-3145
Email: sstrenger@fs.fed.us

Jim Keys: Ecosystem Management Coordination Team
National Coordinator for Integrated Inventories
Phone: (202) 205-1580
Email: jkeys01@fs.fed.us

Henry Lachowski: Remote Sensing Applications Center
Integration of Remote Sensing Program Manager
Phone: (801) 975-3750
Email: hlachowski@fs.fed.us

Haans Fisk: Remote Sensing Applications Center
Remote Sensing / GIS Specialist
Phone: (801) 975-3750
Email: hfisk@fs.fed.us

Don Fallon: Intermountain Region – R4
Terra Module Coordinator
Phone: (801)-625-5361
Email: dfallon@fs.fed.us