OUTREACH EVENT REPORT AND RECOMMENDATIONS

Attendee's Name and Report Writer:
Joseph Kerski, Geographer:
Education/GIS, USGS, Denver, Colorado.

Event:
Conduct Hands-On Training for USGS Mapping Applications and Earth Science Information Center Staffs in Principles and Applications of Geographic Information Systems.

Summary

Joseph Kerski taught a one-week course in geographic information systems at the Mapping Applications Center from 24-28 September 2001. The class featured theory and hands-on use of ArcView GIS versions 3 and 8, and emphasized analysis of problems in biology, earth science, geography, and hydrology using USGS digital spatial data. Activities included collecting coordinates with GPS and bringing them into a GIS, downloading and using USGS DOQ, DEM, NLCD, Landsat, DRG, and DLG data, conducting spatial and tabular queries, and registering imagery.

Participants in the class were largely from the Mapping Applications Center and from the Earth Science Information Center.
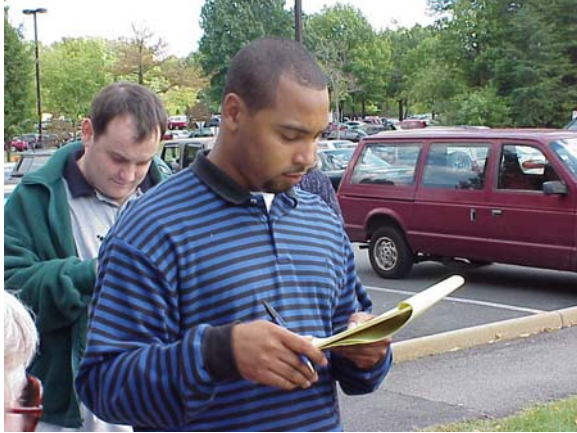
Collecting the GPS coordinates that we later brought into ArcView, overlaying them on top of a DOQ and a DRG from www.gisdatadepot.com.

Syllabus

Monday
8
Introductions, Philosophy, Goals
830
ArcIMS site tour
9
Tabular and Map Analysis
10
Definition of GIS
1030
World Demographic Analysis

1
Definition and Concepts of GIS
2
Global Temporal and Spatial Earthquake Analysis
3
Tornado Analysis: Point on Polygon
4   End

Tuesday
8
Projecting and Point-On-Polygon Overlay with Earthquakes
830
1900-2000 USA historical county analysis

with 3D
915
Snowfall Raster Analysis
1045
GIS Data Types Overview
11
DOQ and DRG Downloading and Formatting

1
Projecting Image Data
3
Digitizing Lines and Polygons
330
Hurricane Analysis
4
End

Wednesday
8
DLG downloading and formatting
845
Stipa Comata Vector Analysis
11
DEM downloading and formatting

1
Creating Slope, Aspect, Hillshade, and Contour Layers with DEMs
130
Introduction to GPS
145
Coordinate Capture with GPS
245
Inputting GPS coordinates into GIS
330
Hotlinking Photographs to Points in GIS
4
End

Thursday
8
Automated Method of Inputting GPS Coordinates to GIS
9
Stipa Comata Raster Analysis

1030
Draping and 3D Analysis
11
DLG Import Using ArcToolbox
1145
GIS Applications Overview

1
DLG SDTS Import Using ArcToolbox
3
TIGER and Census Local Analysis
4   End

Friday

8
TIGER and Census Local Analysis, part 2
845
Geocoding
10
National Land Cover Data Analysis
11
Watershed and Permeability Analysis

1
Remote Sensing, Landsat, and Image
Analysis
230
Elections Analysis
4
End: You were excellent and I do
appreciate you for inviting me and including
the course in your GIS education journey.
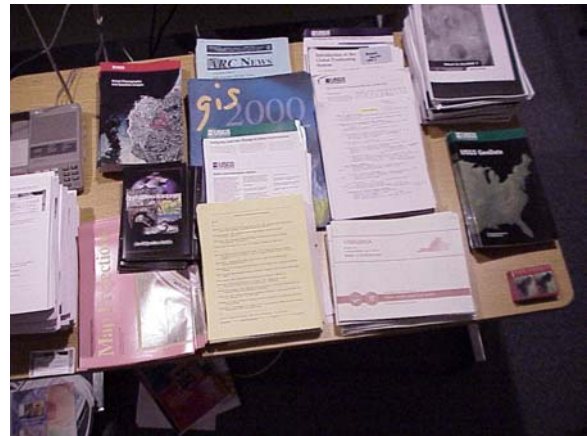
*Materials for trainees included GIS
exercises, articles from GIS leaders,
booklets on remote sensing, GPS, UTM,
and spatial data formats.*

*GPS coordinate collection brings in a host
of considerations important to GIS work,
particularly those of coordinate systems and
datum shifts.*

The training facilities for the class were one of the best I have experienced lately.

Location of Training: USGS Headquarters, Reston, VA.

Acknowledgements

I would like to thank Tony Herr and Wendy Budd for inviting me and paying my way to Reston to conduct this training. I also greatly appreciated the assistance of Doug Franz in the computer lab. I also thank the participants of the class for sharing their knowledge with me. It was a true privilege to work with these people.

I also took advantage of the fact that I was at headquarters to meet briefly with Marion

Fisher, Patricia Hytes, Lesley Ogrosky, Stephen LePage, and Annette Kulyk.

Notes on ArcGIS 8 and SDTS

In this workshop, we used Arc8's ArcToolbox to bring in SDTS DLG and DEM data. Both were a success. We need to write procedures for the data user community to do this, as well as how to link the attributes to the features. We also brought in SDTS DEM grid data into ArcView 3.2 with no problems. For those of us who have been struggling with SDTS formatted data for years, this is truly cause for rejoicing.

The only concern that arose from these activities is that after using Arc8, ArcView 3.2 behaved strangely on many machines. Sometimes, the view would be populated with data, but the table of contents would disappear. This is a concern because at no time were the 2 packages running at the same time, and the machines were less than 2 months old. We need to make sure we're ordering as much RAM as possible when we are running Arc8, because the above problem as well as the PCs locking up seem to me to be related to memory.

Materials

These are the materials I brought to the training:

Understanding GPS
UTM Coordinate System
VA Map Index
24K and 100K local topo maps
GIS 2000 - from GIS Experts
GIS Touches Our Everyday Lives
Sample GIS Texts
Sample GIS Journals and Atlases
ArcView - Based Lessons - J. Kerski
Satellite Image and Remote Sensing Primer

Map Projections
USGS GeoData

Recommendations

Following are several nice comments I received from class participants:

Dr Kerski -

Thank you for presenting your GIS class in Reston last week. Its focus on USGS digital data and how USGS customers performing GIS analysis use it was especially pertinent. The feedback I received from my staff was all very positive. The workshop was very beneficial in assisting the development of ESIC staff in their ability to respond to digital data inquiries and at using GIS techniques to support emergency data requests. Hopefully, you will be able to offer the class in Reston again in the not so distant future. We still have a number of staff that would benefit greatly from your class. Thanks again for making the trip under these more tenuous travel conditions.

I want to thank you for a really great GIS class. You provide a wonderful teaching manner and have the ability to explain this very technical subject so well. I was very impressed with all of your resources.

I just wanted to let you know that the GIS Workshop that Joseph Kerski taught last week in the MAC was some of the best training I've ever received. His class was packed with information yet well-paced, his handouts were extremely valuable, and his teaching style is excellent. It was also great to have an "inside" teacher because he offered many valuable insights into the use of USGS data in GIS. If you can get him back here for more in-depth training in any

aspect of geography/GIS, please do. If my job description allows it, I will be the first to sign up!

My Own Recommendations

I recommend that these types of training events be used increasingly in the future to prepare our workforce for new opportunities and challenges. As the comments above reflected, having one of our own people conduct the training supplements other training (for example, from ESRI) in a cost-effective way by emphasizing how to use USGS digital data in GIS analysis. To maximize the effectiveness of the interdisciplinary sciences of the USGS, our employees must understand the nature of spatial analysis, even if they are not using GIS daily on the job.

In addition, we cannot expect our data users to understand how to use our spatial data in various ways if we cannot do the same procedures ourselves. Our own employees need to understand how our data is accessed and used.

We also are using data from other agencies and organizations, and we need to be familiar with some of the most common of these data sets as well, for example, EPA BASINS data, Census TIGER data, and NWI wetlands data. Using other agency data will increase in the future.

end of report