EDUCATION EVENT REPORT

Name: Community Mapping Project
GIS Training for Educators and Planners

Participant: Joseph Kerski

Dates: 13-15 June 2000

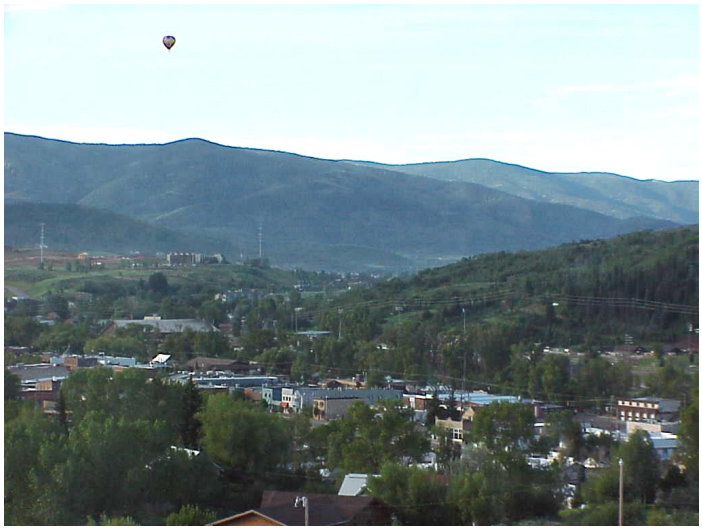
Location: Colorado Mountain College Alpine Campus
Steamboat Springs, Colorado

Background:

I conducted two days of training for a project entitled "This Land: Mapping Our Communities." This encourages students to investigate key issues of society, economy, and ecology in the lives of their towns. GIS and GPS technology are important components of this project. Students work to create maps of their communities that provide new valuable information. City and county planning departments are also involved in this project, as was a representative from the Colorado Department of Natural Resources. This trip was funded entirely from outside sources and not from the USGS.

The principal funder of the project is the Orton Institute. Lyman Orton, proprietor of the Vermont Country Store (http://www.vermontcountrystore.com), funds the Orton Institute through the Orton Family Foundation (http://www.orton.org). The Orton Institute's goals are to develop and deliver innovative community land-use planning tools and processes, to promote citizen participation in community decision making, and to provide education, training and information resources to citizens, community leaders and professional planners to more effectively manage growth. It would be wise to investigate a partnership between the USGS and the Orton Institute for the future.

The training I was involved in was co-funded by the Yampa Valley Legacy education Initiative (http://www.yvlei.org), a major place-based education facilitator in Steamboat Springs, Colorado. In Vermont, similar activities are occurring through the Vermont Institute of Natural Science (http://www.vinsweb.org).



Hot air balloon above Steamboat Springs, Colorado. 14 June 2000, 7:10am.

The Yampa Valley project centers on the children and youth who live along the Yampa and upper Colorado rivers. The organizers believe that the truths revealed through careful study of one's own habitat are applicable to the entire planet, but more readily revealed close to home and in early life. This project emphasizes place-based education that focuses on the cultural and ecological heritage of the area. The projects are interactive, and take an interdisciplinary approach to studying the region, and will engage students in each of the five participating school
districts in high visibility, community-based projects.

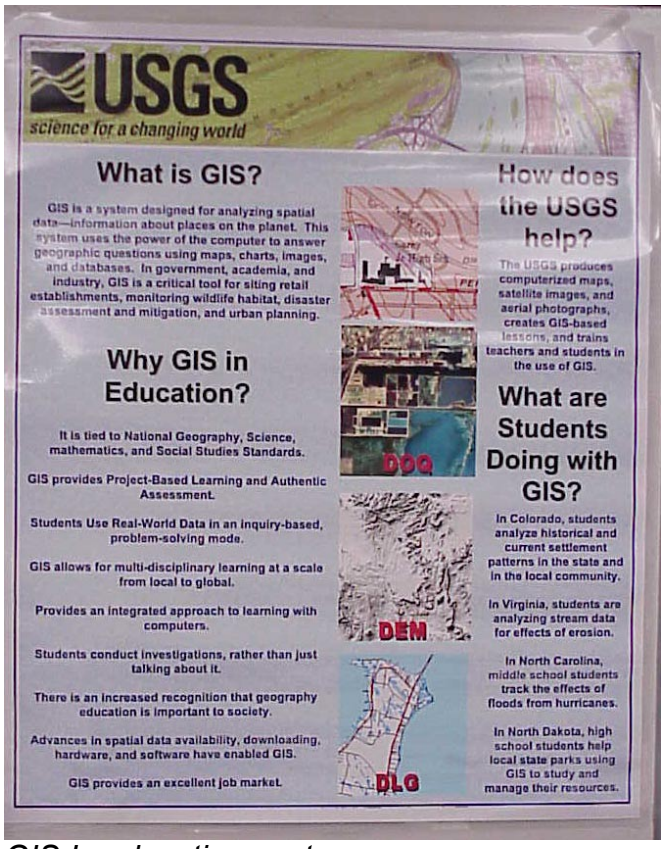
The communities provide amazing potential as learning laboratories for students. The organizers seek to get them involved in our communities, studying and working on real life projects, issues and problems, forging connections with people throughout the valley, and linking the valley together. Projects and activities that will use the valley as a learning laboratory will help bring about a systemic change in schools, link schools with communities, and leave a lasting educational legacy for the valley's future.

The Initiative is developed by students, teachers, and community members from each of the participating communities and will be implemented in the five school districts of Hayden, Moffat, South Routt, Steamboat Springs and East Grand and the independent schools that exist within these districts.

Summary:

I conducted two days of training to the planners, teachers, and systems administrators of the Moffat and Routt County area at Colorado Mountain College [***agenda-outline at end of this report***]. I distributed GIS and USGS educational resources (below).

Participants investigate resources on GIS and USGS at the institute.



GIS In education poster.

Participants working through an educational activity.

Participants collecting GPS coordinates to be imported into a GIS.

Once again, the positive feedback and the invitation of the two school districts and planners confirmed that this type of educational outreach is a good opportunity for the USGS, particularly the national mapping program, to work with the schools at a value-added level. Teachers will be working with USGS data during these GIS-based activities that they incorporate into their curricula, and recognize that we do provide training that is relevant to their needs. It also provided a great opportunity to network with the Yampa Valley Educational Initiative, and as I stayed in the home of Lyman Orton, with the Orton Foundation. Mr. Orton is keenly interested in environmental issues, and I feel that it is beneficial for a person of his influence to be aware of our organization. I gave him a sample of USGS maps and resources. Increased customer spatial awareness and training is essential for the future of all agencies such as the USGS, who rely on a geographically informed public and Congressional funding.

When we work with a group in a long-term relationship, I firmly believe this brings us more benefit than a one-time presentation, particularly in the case of getting planners and educators to use and apply our digital data.

Yampa Valley GIS Institute 14-15 June 2000 - Agenda

Participants: 12 planners/educators/administrators

Trainers:
Joseph Kerski

Software needed for the workshop:
ArcView Version 3.2
Spatial Analyst (for demo)
ArcVoyager Version 5
Netscape
Paint Shop Pro or other imaging program
WinZIP

Day 1

8:00 Introductions
Logistics
Goals of the institute
My Philosophy on the class and on GIS in Education
Review materials from USGS, Census, ESRI, etc.

8:40 What is GIS?
View Geography Matters video
Examine USGS, ESRI, and BLM GIS Posters and other resources
Discuss hardware, software, data, people (thinking explorer).

9:00 Who Uses GIS?
Applications of GIS:
Look at ArcNews, ESRI Map Book, and USGS GIS Poster.
Transportation, paleontology, geography, geology, history, vehicle routing, climatology, zoning, marketing, education.

9:35 Break

9:55 Why Use GIS in the Educational Curriculum? [all]
View K12 GIS Video
View GIS in Education slide show [Joseph]

Discuss Advantages

Discuss Challenges

10:45 Hands-On Exercise: Build maps and conduct queries using Internet Map Server sites on the web

11:25 Hands-On Exercise: Thematic Mapping with ArcVoyager, Part 1
How is GIS different from web mapping or CD Atlases?

Examine: World Data
USA state Data
County Data
City Data

11:55 Lunch

12:55 Hands-On Exercise: Thematic Mapping with ArcVoyager, Part 1
How is GIS different from web mapping or CD Atlases?

2:50 Break

3:05 Hands-On Exercise: Bringing Data from the web and using in GIS
Earthquake USGS Data
TIGER Data

4:45 Discussion

5:00 End

Day 2

8:00 Next steps

8:15 Hands-On Exercise: Downloading and Analyzing GLOBE data in ArcView

9:15 Hands-On Exercise: Tornado Data 1950-1990

10:00 Break

10:15 Demonstration: Data Available for GIS Education [Joseph]

Discuss data availability and types, with an emphasis on local and CO data sets, including the Great Basin geoscience data CD:

A. Base Mapping Data:

1] Vector Data sets:
Digital Line Graphs (DLGs)
River Reach Files
TIGER files

Themes:
Transportation
Hydrography
Hypsography (contour lines)
Boundaries

2] Grid Data Sets:
Digital Elevation Models (DEMs)

3] Image Data Sets:

Landsat data
Other satellite data
Digital Orthophotoquads (DOQs)
Historical aerial photos
Digital Raster Graphics (DRGs)

B. Thematic Mapping Data:

Land Use/Land Cover
Geology
Census demographics
EPA BASINS

11:15 Hands-On Exercise: Analyzing demographic characteristics across states in the USA

Analyzing demographic characteristics across counties in the USA
1900—1990

12:00 Lunch

1:00 Collecting and Using GPS data within a GIS

2:00 Hotlinking Images in a GIS

2:45 Break

3:00 Review: Hands-on Exercises with ArcView

3:30 Discussion of Local Data Sets

4:00 Group Discussion: Integrating GIS In the Secondary School Curriculum

Hardware issues
Software issues
Lab manager issues
Curriculum issues
Administrative issues

4:45 Discussion: Resources Available for GIS Education [all]

1] Organizations Clbas@co.boulder,co.us
- State, federal, local government
- Private companies
- Community Colleges
- Universities
- Professional Societies

2] People
- Listserves
- Educational Technology Consultants
- Other ESRI K12 ATP Staff
- ESRI Schools and Libraries Staff
- Federal-state-local agency Staff

3] Materials
- USGS, Census Bureau, EPA, NOAA, NASA
- ESRI, Intergraph, other GIS companies

4] Projects and Training Opportunities

- ESRI Livable Communities Grant
- GITA , AAG, NCGE, URISA conferences
- Alliance summer institutes
- GLOBE - UMAC
- USGS training and workshops

4:45 Final Discussions

5:00 End of institute

end of report