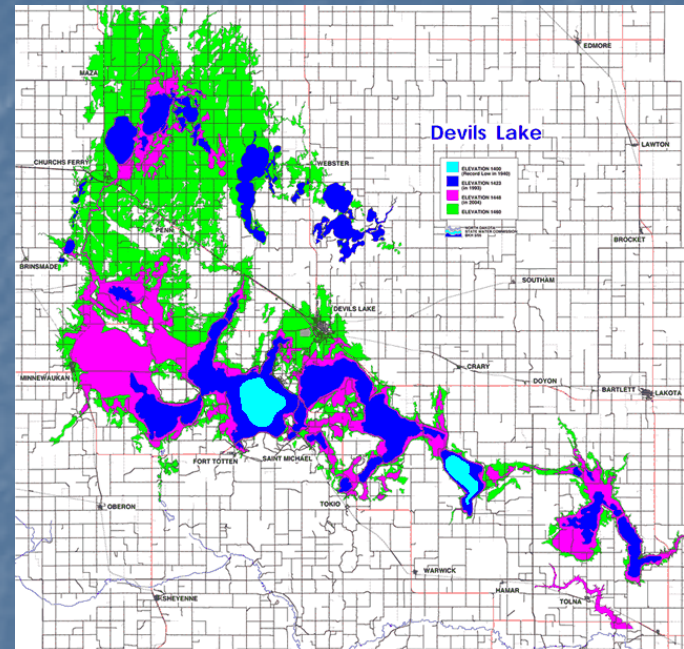


Outreach Award Report: Dakota Science Center

Expanding Geospatial K-12 Education into North Dakota's Devils Lake Region



Laura Munski, Dakota Science Center
Gregory Vandeberg, UND
Douglas Munski, UND & ND EdPARC

North Dakota View Meeting
Turtle Mountain Community College
Belcourt, ND
August 9, 2007

Project Goals: Partnerships (K-12 PVOs and Higher Ed)

Lake Region
STATE COLLEGE
DEVILS LAKE, NORTH DAKOTA

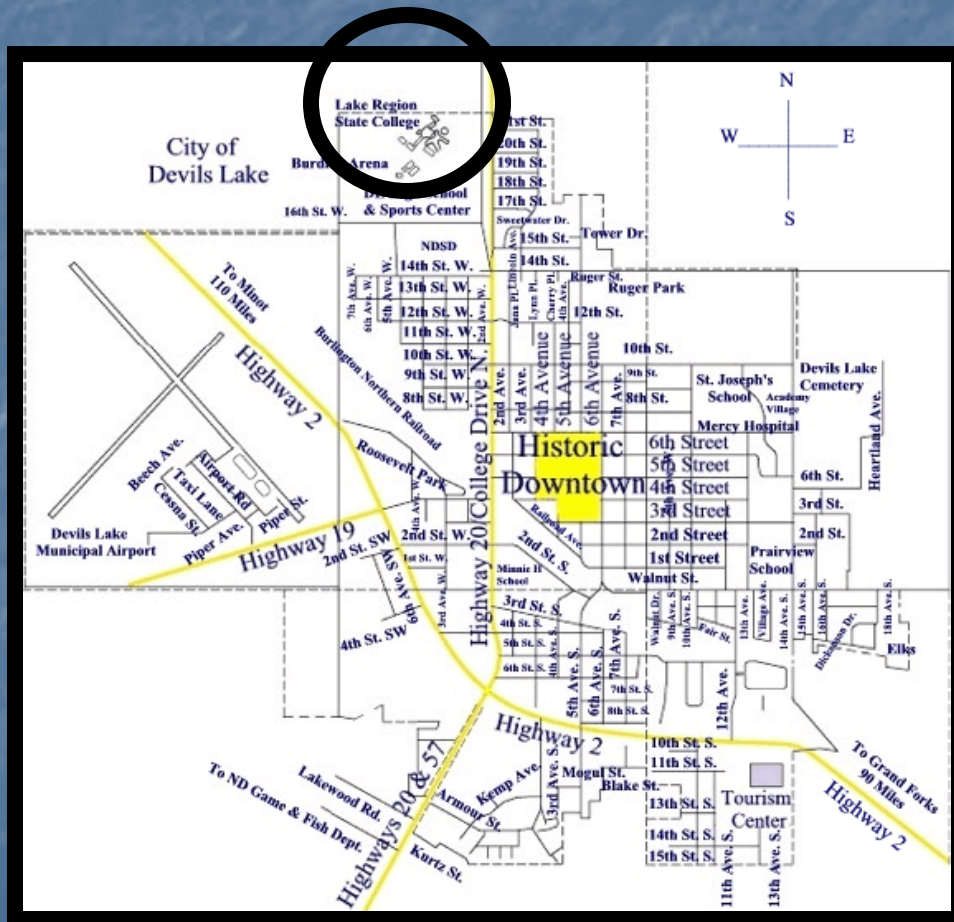
Dakota Science Center
Science is for Everyone!

North Dakota **VIEW**

EdPARC

UND

Program Location and Promotion



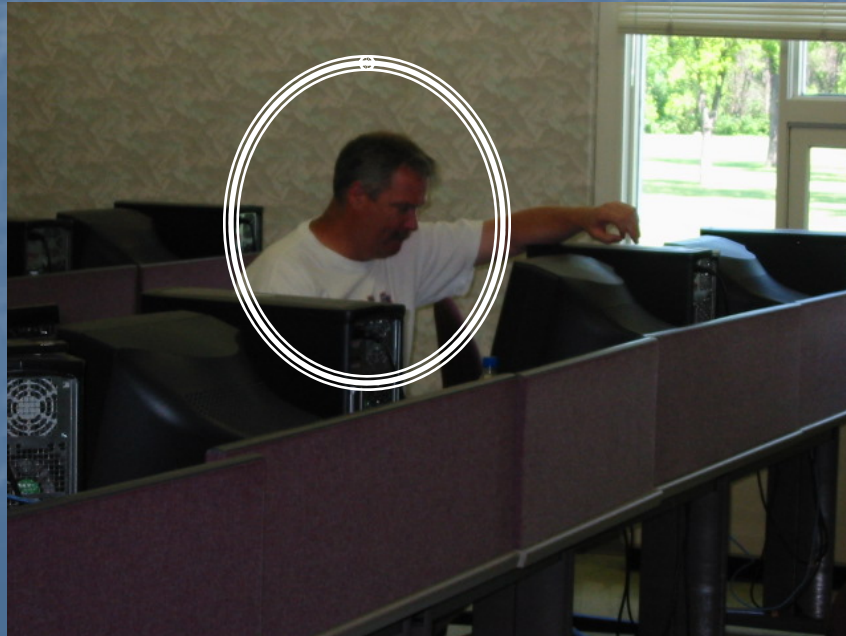
- UND DCE
- NDGA Newsletter
- NDCSS Contacts
- NDSTA Contacts
- NDDPI Science Teachers Mailing List
- ANDG Grand Forks School District Educators Network
- Previous GEOG 900 Participants

Dr. Vandenberg and 2007 Workshop Participants



- Sheyenne, ND
- Grand Forks, ND
- Maddock, ND
- Devils Lake, ND
- Edmore, ND
- Cando, ND

Pre-evaluation instruments showed that the only teacher currently using GIS/GPS software in their classrooms was from a middle school in Grand Forks.



Activities of June 13 and 20, 2007

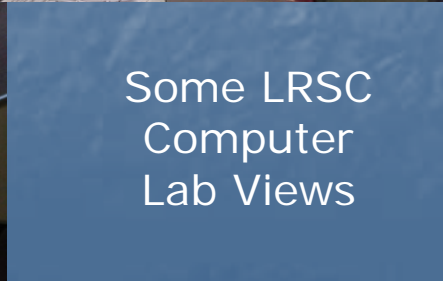
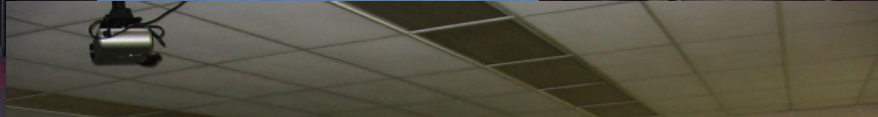
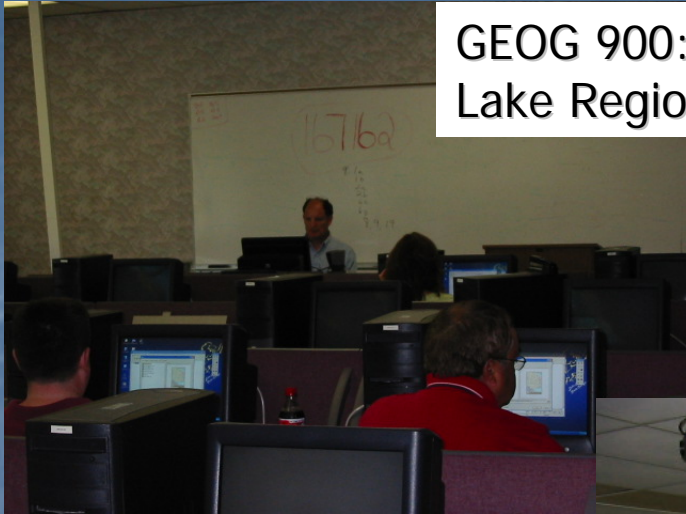
- National Geography Standards
- Overview to ND View
 - Highlighting Remote Sensing Tools
- GPS
 - Field Exercise
 - Navigation Exercise
- GIS (Mapping Our World)
 - Introducing GIS
 - Integrating GPS Data into GIS
 - Take-home Exercise
- Reconnecting to Last Session
- Mapping Our World
 - Continued with Module 1 and Finished It

Transitioning into
- Remote Sensing Activity
- Google Earth Exercise
- Mapping Our World
 - Worked through Module 2
- Evaluation
 - Included Open-ended Questions
- Post-Evaluation Brainstorming

Evaluation of the Workshop

- Post-evaluations revealed that the most valuable aspects of the course were the hands-on learning with the GPS equipment (**2.5 hours**) and the supervised lab time with the computer software for both GPS and GIS (**6.5 hours**).

GEOG 900: Geospatial Technologies Workshop
Lake Region State College, June 13 & 20, 2007



Some LRSC
Computer
Lab Views

Evaluation of the Workshop

When asked if the workshop met its objectives, the materials useful and the instructor effective the teachers gave the course an overall rating of 'strongly agree' (**80%**).

Teachers also agreed schedule was appropriately timed.

Post-Evaluation Brainstorming

Rethinking the Focus and Trying an Additional Partnership

- Young Scientists Academy
 - Sponsored by UND School of Engineering and Mines partly through a UND SPEC Grant
- Dakota Science Center Affiliation
 - UND GEOG DEPT already involved in helping to host one of the half-day lab activities.
 - Additional personnel readily available.
- Capitalizing on an ideal opportunity for 25 students from grades 7-10 to learn about GPS/GIS!

Activities of August 1, 2007

- Overview to GPS Technology
- Traditional Latitude and Longitude Exercise with Globes
 - Emphasis on Cardinal and Intermediate Directions
- Familiarization with GPS Units
- GPS-Based Geocaching Activity (1.5 Hours!)
- Google Earth Exercise
 - Take-home Directions and a Geocaching Activity



Geocaching Activity

- Twelve Campus Landmarks
- Working in Pairs (One Trio)
- Great Fun **but** Somewhat Tiring with the **Hot** and **Humid** Weather



← Easy



Hard →

Google Earth Activity

- Thompson, ND
- Grand Forks, ND
 - Minto, ND
- Devils Lake, ND
 - Fargo, ND
- East Grand Forks, MN
- Crookston, MN



Young Scientists Academy Evaluations

- Likes
 - Hands-on Activities
 - Geocaching Exercise
- Dislikes
 - Weather
 - Short Time
- Suggestions
 - A second GPS/GIS Session
 - More Computer Time
 - Downloading Waypoints and Printing a Map

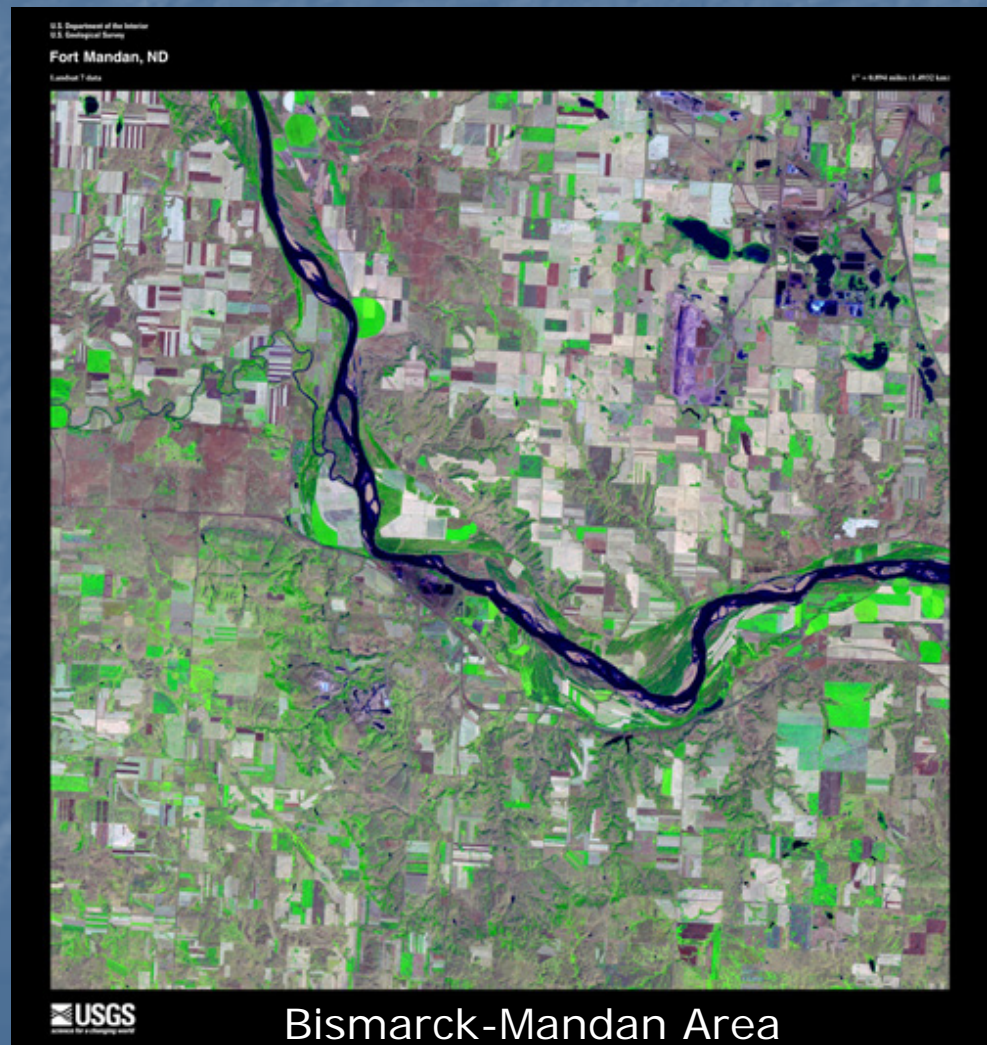


Conclusion

- Were the project goals met?
 - Partnerships: Yes!
 - Agencies involved continuing to work together.
 - “New Model” Workshop: Yes!
 - Curriculum and delivery successful.
 - Revision and Diffusion of New Model Workshop: In progress...

Next Steps

- Expanding the Network
 - More Aggressive Recruiting—NDOA?
 - Tapping the Homeschoolers
- Future Workshops
 - Mini-Workshops
 - Minot (NDEA IC)
 - NDGA Bismarck
 - UTTC and/or TMCC
 - GEOG 900
(Fort Totten in June, 2008?)



Acknowledgments

- The various folks at LRSC for hosting the sessions at that campus...
- Gregory Vandenberg for being the lead instructor...
- Darrel Nucech and Bill Wetherholt...
- Brad Rundquist and Susan Wahl for liaison efforts between NDView and DSC...
- And those YSA participants...



QUESTIONS ANYONE?