ACS Students Across Alaska

*Using the Alaska In Maps Interactive Atlas with ArcView*

Kay Holmes
Alyeska Central School
GEOS 595
June 18, 2004
Content:

- Goals and Objectives
- Alaska State Content Standards
- Data Used
- Method
- Results
- Conclusions
- Future Directions
Goal: To be able to incorporate the use of GIS into our current HS science curriculum.

Objectives:

1. Where do our students live in Alaska and what patterns (distribution or otherwise) do we see?
2. Where is a student related geographically to other natural or human features?
3. Can GIS help us to see relationships between features (natural or human)?
Alaska State Content Standards:

**Geography:**
- A: student should be able to make and use maps, globes and graphs to gather, analyze, and report spatial (geographic) information. (A1-A6 all apply)
- C-1: analyze the operation of earth’s physical systems including ecosystems, climate systems, and tectonics...

**Technology:**
- C1: use technology to observe, analyze, interpret, and draw conclusions

**Science:**
- A14a: understand the interdependence between living things and their environments
Data Used:


- Power School student enrollment data from Alyeska Central School (June 16, 2004)
The short version of how this came together:

- The search for a meaningful project...
- I’ve changed my mind! Eklutna Lake map to current statewide perspective. Shift from large to small scale!
  1. Getting a georeferenced map of AK
  2. Alaska in Maps-A Thematic Atlas
  3. Saved files as dbf files and loaded into ArcView
  4. Selected 4 views based on general criteria: (biological, geological, social, etc.) and selected appropriate themes to layer.
  5. *PowerSchool* database info (joined town fields)
  6. Analysis: Simple queries, overlays with two themes, find, see what works and what needs improvement
Analysis:

- Identifying locations and students
- Simple queries (one theme)
- Calculating distances
- Overlays-queries using two themes
- Still in its infancy—lots left to explore in all my free time!
Towns in Alaska
### ACS Students in Alaska

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<th>Class</th>
<th>Year</th>
<th>Sex</th>
<th>Marital Status</th>
<th>First Name</th>
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Sample Query-Selecting by Theme
Summing it up...

- All good and potentially useful things take time.
- All things technological take more time and lots of help. (Note: Making good use of GIS and GPS will take many well written lesson plans especially for correspondence students.)
- Getting a good georeferenced base map at the outset is a good idea and can save time.
Future Directions / Hurdles to Overcome

- Supplement compass orienteering lessons with lessons incorporating GPS technology
- Explore *Alaska In Maps: A thematic Atlas* further to see what it can do on its own and with ArcView. Explore the feasibility of using GIS in a correspondence setting (license agreements for kids off site?)
- Learning to do this is hard enough face-to-face. How much more difficult will this be trying to teach GIS long-distance?
- Can I use certain aspects of this successfully without teaching how to use all of ArcView from scratch?
Acknowledgements:

- **Neal Brown** – Thanks for securing the NASA space grant that made this an economically viable opportunity for teachers!
- **Anupma Prakash** for being such a fantastic teacher and for not allowing me to extend my deadline.
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- **Bill Witte** for joining data tables and all the troubleshooting
- **Tim Buckley** for having the forethought to bring (and share) his Alaska in Maps CD.
- **Russell Santee** at ACS for trying numerous times to email me the excel spreadsheet in an form I could read.
- Fellow teachers for being such great folks to work with!