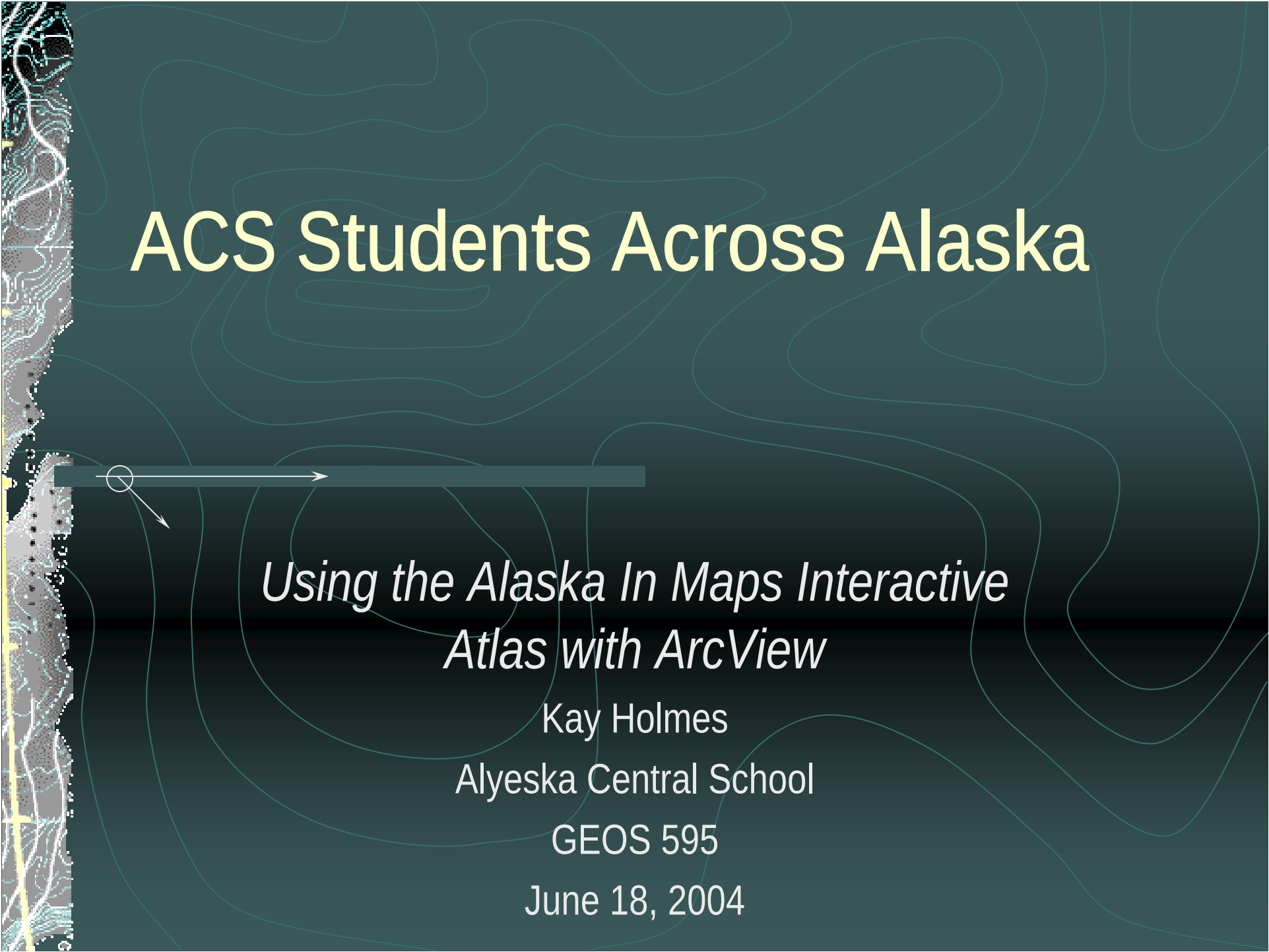




ACS Students Across Alaska

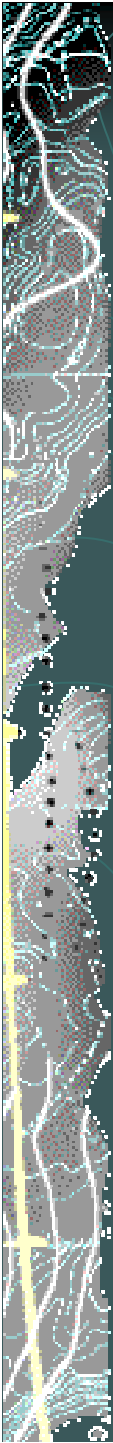
*Using the Alaska In Maps Interactive
Atlas with ArcView*

Kay Holmes

Alyeska Central School

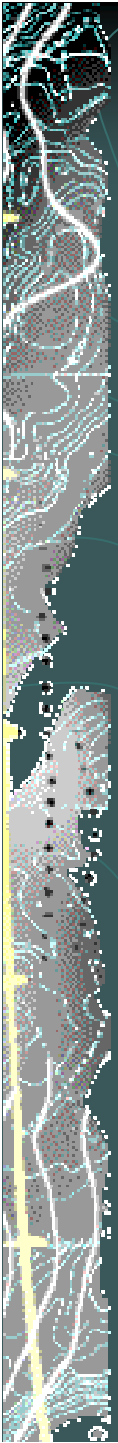
GEOS 595

June 18, 2004

A vertical strip on the left side of the slide shows a topographic map of a coastline. It features contour lines, a river or stream, and a yellow line that might represent a road or a specific survey path. The map is in grayscale with some color highlights.

Content:

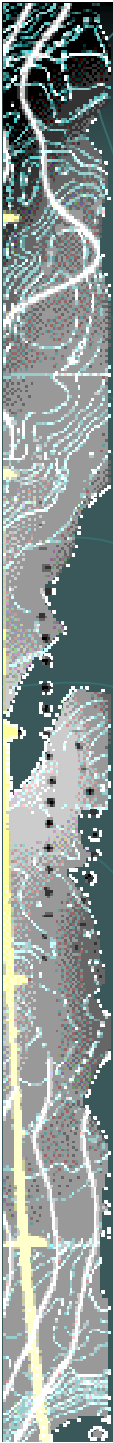
- Goals and Objectives
- Alaska State Content Standards
- Data Used
- Method
- Results
- Conclusions
- Future Directions



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:

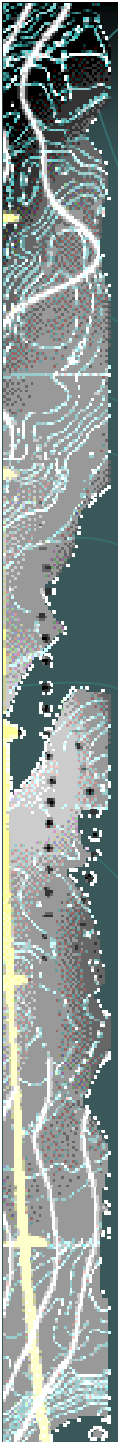
- A: student should be able to make and use maps, globes and graphs to gather, analyze, and report spatial (geographic) information. (A1-A6 all apply)
- C-1: analyze the operation of earth's physical systems including ecosystems, climate systems, and tectonics...

● Technology:

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

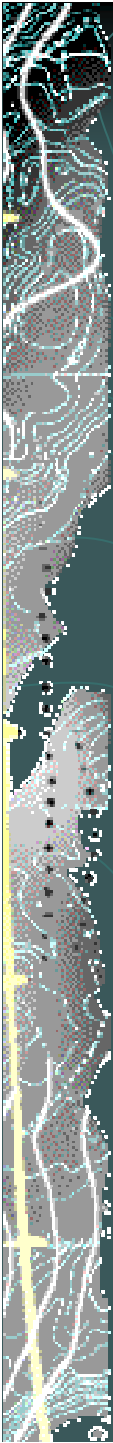
Science:

A14a: understand the interdependence between living things and their environments



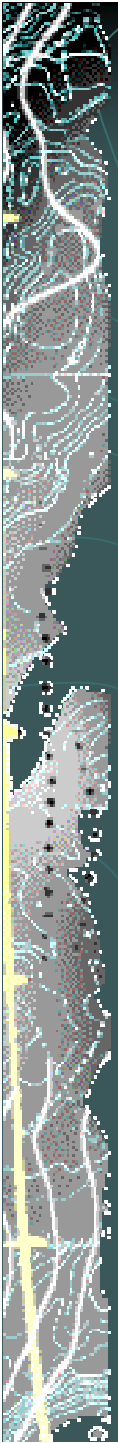
Data Used:

- *Alaska In Maps: A Thematic Atlas* (CD-ROM), 1999, produced by University of Alaska, Fairbanks, Alaska Dept. of Education and Early Development and Alaska Geographic Alliance. All maps used in this project use the Albers Conic Equal Area projection.
- Power School student enrollment data from Alyeska Central School (June 16, 2004)



The short version of how this came together:

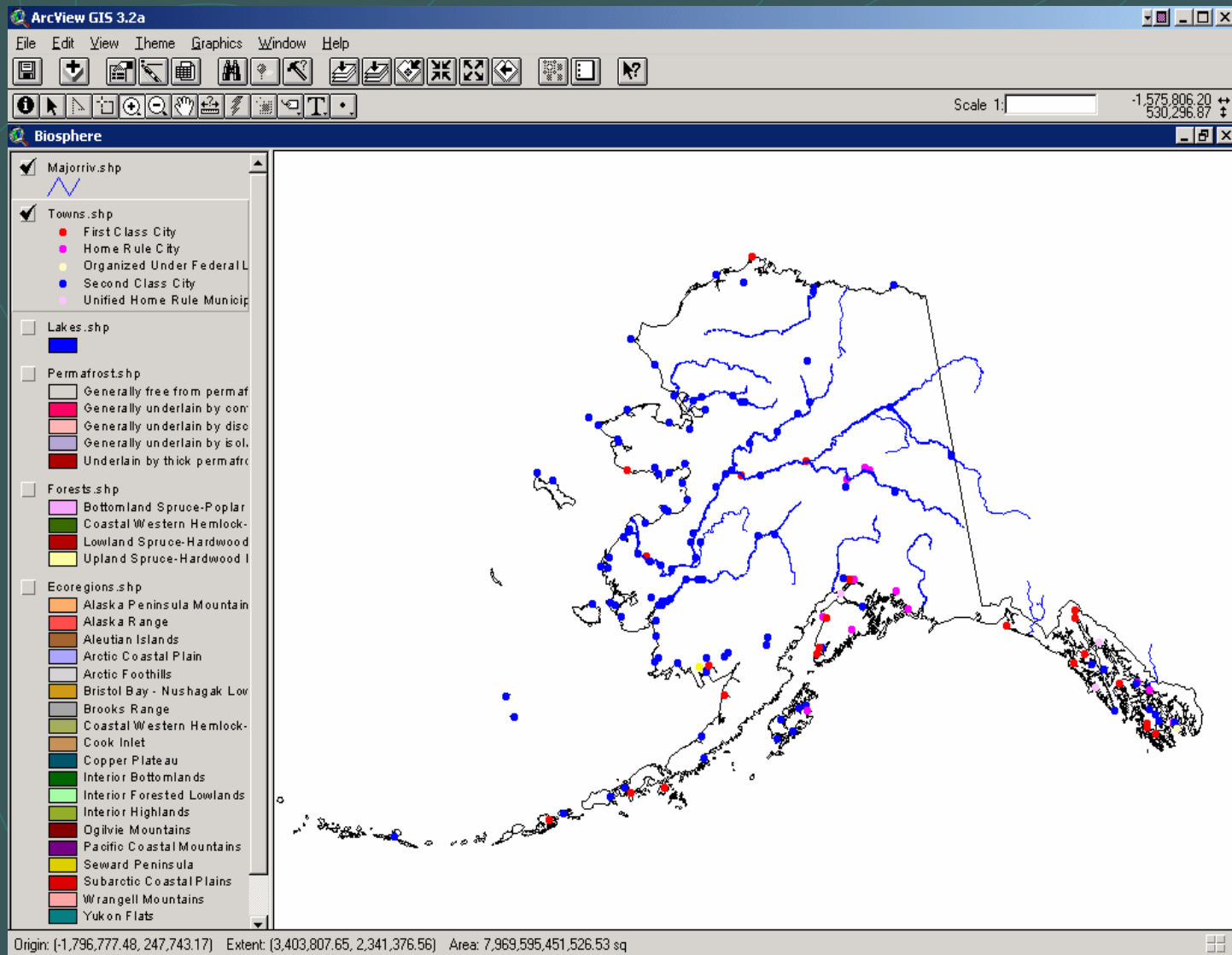
- The search for a meaningful project...
- I've changed my mind! Eklutna Lake map to current statewide perspective. Shift from large to small scale!
 - 1: Getting a georeferenced map of AK
 - 2. Alaska in Maps-A Thematic Atlas
 - 3. Saved files as dbf files and loaded into ArcView
 - 4. Selected 4 views 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

A vertical strip on the left side of the slide shows a fragment of a topographic map with contour lines and a yellow line.

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

ArcView GIS 3.2a

File Edit Table Field Window Help

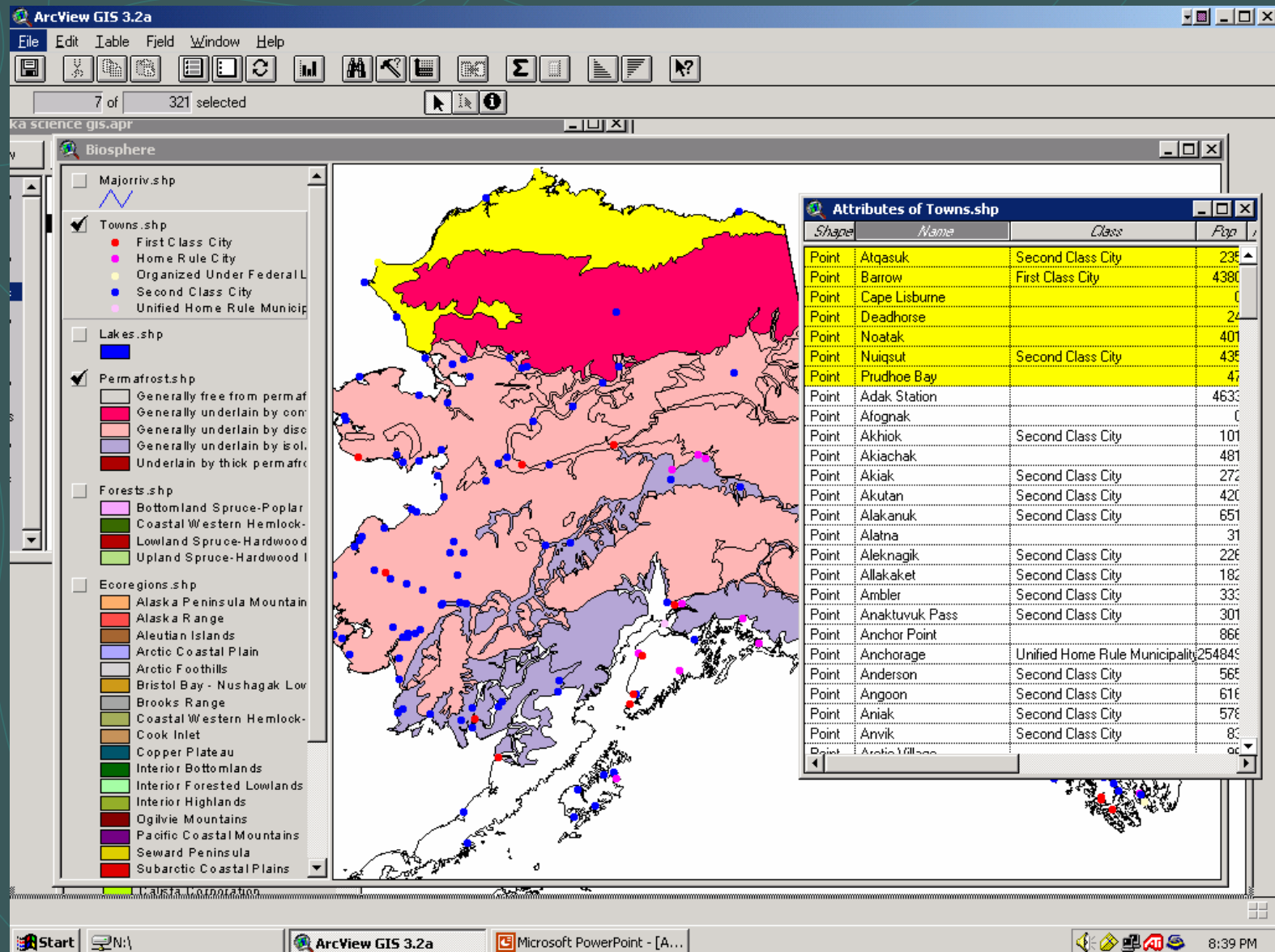
1 of 321 selected

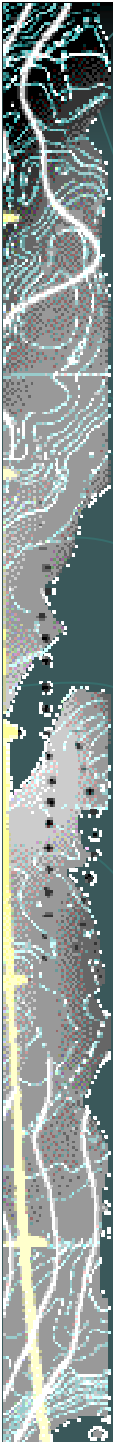
Attributes of Towns.shp

Shape	Name	Class	Pop	Incorp. da	Ancsa	M&T1	Shape	Last_name	First_name	Grade leve	Entitycode
Point	Houston	Second Class City	994	1966	N	N		Kurpijuwei	Nicholas	12	TU
Point	Hughes	Second Class City	52	1973	Y	N					
Point	Huslia	Second Class City	232	1969	Y	N		Vent	Jeanette	12	TU
Point	Hydaburg	First Class City	398	1927	Y	N		LeCornu	Sequoia	10	AI
Point	Hyder		151	0	N	N					
Point	Iditarod		0	0	N	N					
Point	Igiugig		46	0	Y	N					
Point	Iliamna		103	0	Y	N		Paule	David	2	AI
Point	Ivanof Bay		27	0	Y	N					
Point	Juneau	Unified Home Rule Municipality	29813	1970	N	Y		Greiner	Eric	10	AL
Point	Kachemak	Second Class City	398	1961	N	N					
Point	Kaguyak		0	0	Y	N					
Point	Kake	First Class City	767	1952	Y	N					
Point	Kaktovik	Second Class City	222	1971	Y	N					
Point	Kaltag	Second Class City	245	1969	Y	N					
Point	Karluk		48	0	Y	N		Reft	David	1	AI
Point	Kasaan	Second Class City	42	1976	Y	N					
Point	Kasigluk		514	0	Y	N		Wassilie	Allyn	8	AI
Point	Kasilof		539	0	N	N		Bossert	Garrett	11	AL
Point	Kenai	Home Rule City	6971	1960	N	Y		Cox	Skyla	8	TU
Point	Kenny Lake		500	0	N	N					
Point	Ketchikan	Home Rule City	8552	1900	N	Y		Rader	Nicholas	10	FC
Point	Kiana	Second Class City	415	1964	Y	N					
Point	King Cove	First Class City	691	1947	Y	N		Wilson	Rosanne	11	TU
Point	King Island		0	0	Y	N					
Point	King Salmon		478	0	N	N		Palmer	Allen	0	AI
Point	Kipnuk		567	0	Y	N					
Point	Kivalina	Second Class City	357	1969	Y	N		Hawley	Robin	9	AL
Point	Klawock	First Class City	704	1929	Y	N					
Point	Klukwan		160	0	Y	N					
Point	Knik		443	0	Y	N					
Point	Kobuk	Second Class City	89	1973	Y	N		Garfield	Derek	9	AI
Point	Kodiak	Home Rule City	6749	1940	N	Y		Caasi	Dennis	12	AL
Point	Kokhanok		168	0	Y	N					
Point	Koliganek		194	0	Y	N					
Point	Kongiganak		349	0	Y	N					

Cuts the selected cell to the clipboard

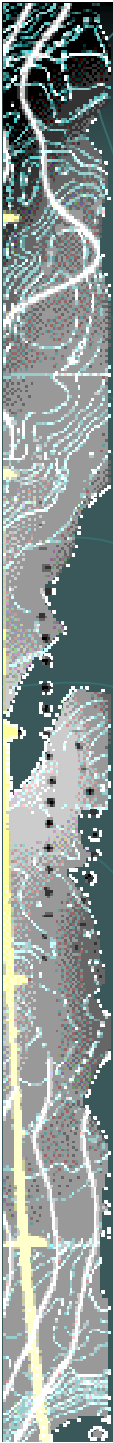
Sample Query-Selecting by Theme





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.

A vertical strip on the left side of the slide showing a topographic map with contour lines, a river, and a road.

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.
- Gary Cooper for holding my hand through all the technical difficulties I encountered
- 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!