Anadromous Fish Distribution in the Fairbanks Area

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GIS/GPS for Alaskan Teachers

June 18, 2004 IARC/NSF

Interior Distance Education of Alaska
A program of the Galena City School District

Content

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- Alaskan Educational Standards

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Project Goals

- Learn to use GIS tools.

- Answer the question: What species of Salmon spawn within 40 miles of Fairbanks and in which drainages?

- Create a lesson template for using readily available public sets of data and maps to teach the power of a GIS for natural resource management.
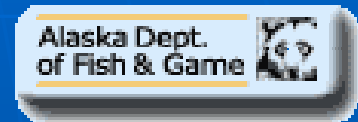
Project Objectives

- 1. Gather Data
- 2. Download Maps
- 3. Use ArcView to create GIS
- 4. Do analysis
- 5. Produce Maps

Alaskan Standards

- Educational standards that this project can address.
  - Science – A15,B1,C3,D4&5
  - Geography - All
  - Math – B1
  - Technology - All

Data and Base Maps

- Alaska Dept of Fish and Game
  - Fish Distribution Database (FDD)
    - GIS files from a public ftp site
    - [http://www.sf.adfg.state.ak.us/SARR/Fish Distrib/anadcat.cfm](http://www.sf.adfg.state.ak.us/SARR/FishDistrib/anadcat.cfm)
- USGS – Topo Maps
  - Geotiff files from ftp site
    - http://agdc.usgs.gov/data/usgs/geodata/drg/temp/drglist_F.html

Method

- Class lecture and lab tutorials to get familiar with ArcView Software.

- Project outline with objectives.

- Data acquisition from Alaska Fish and Game.

- Base Map from USGS server.

- Matched projection of River and Point shape files to the topo map projection.

- Created a mosaic of relevant topo maps then cropped data sets to match.

- Ran queries to indicate and list the desired information.
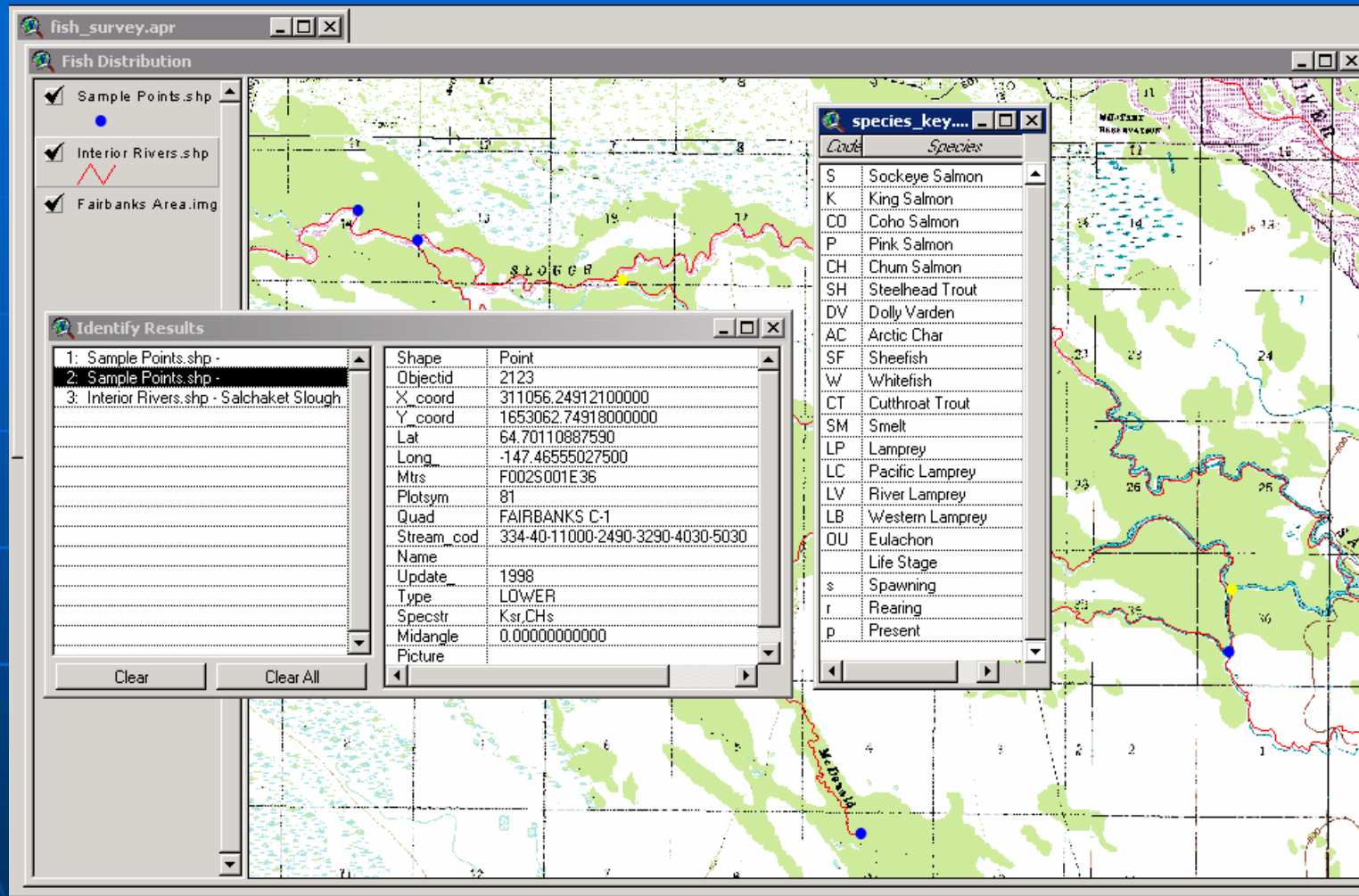
- Produced maps and report on project.
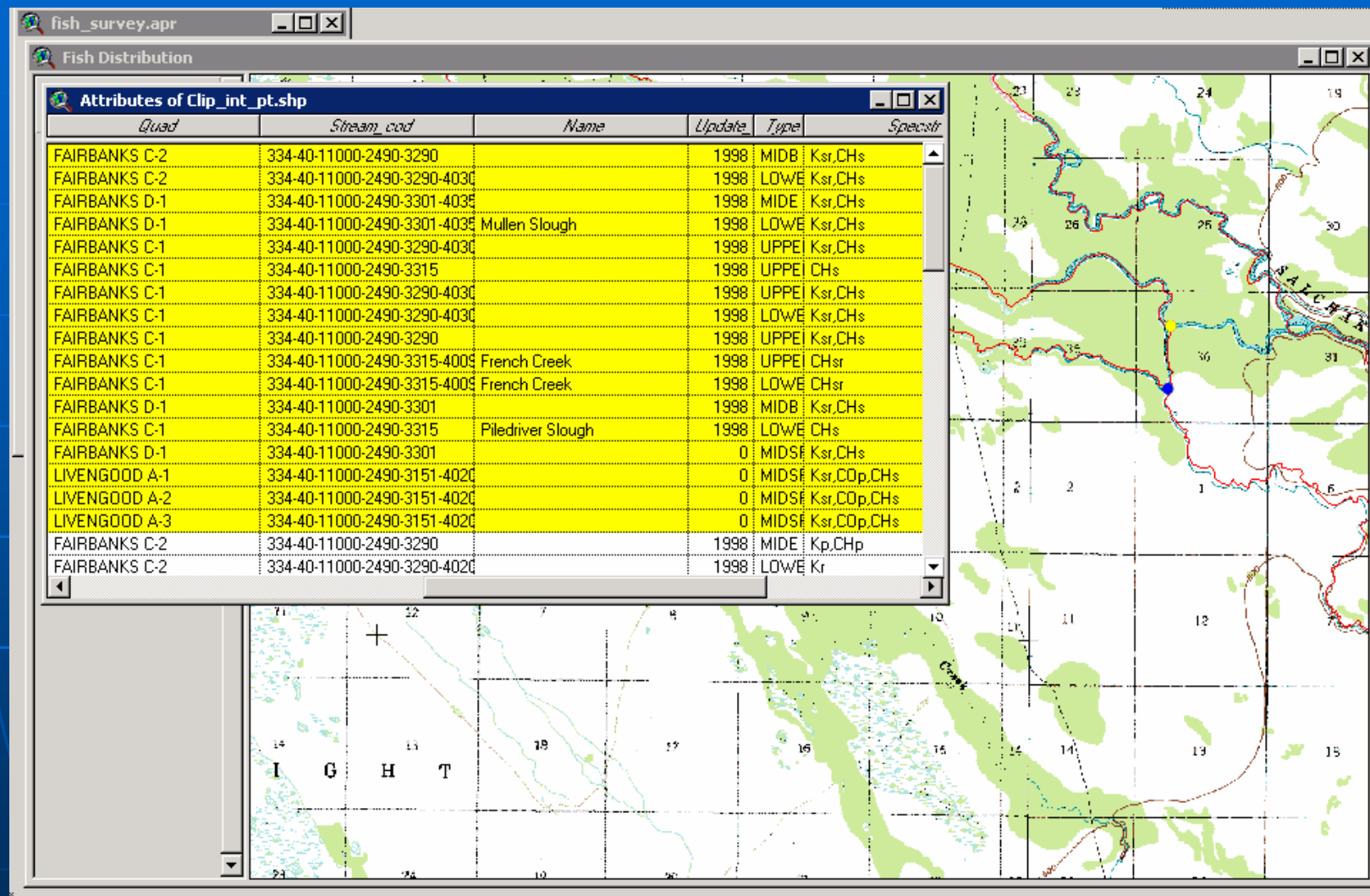
Results – Map, Data and Query
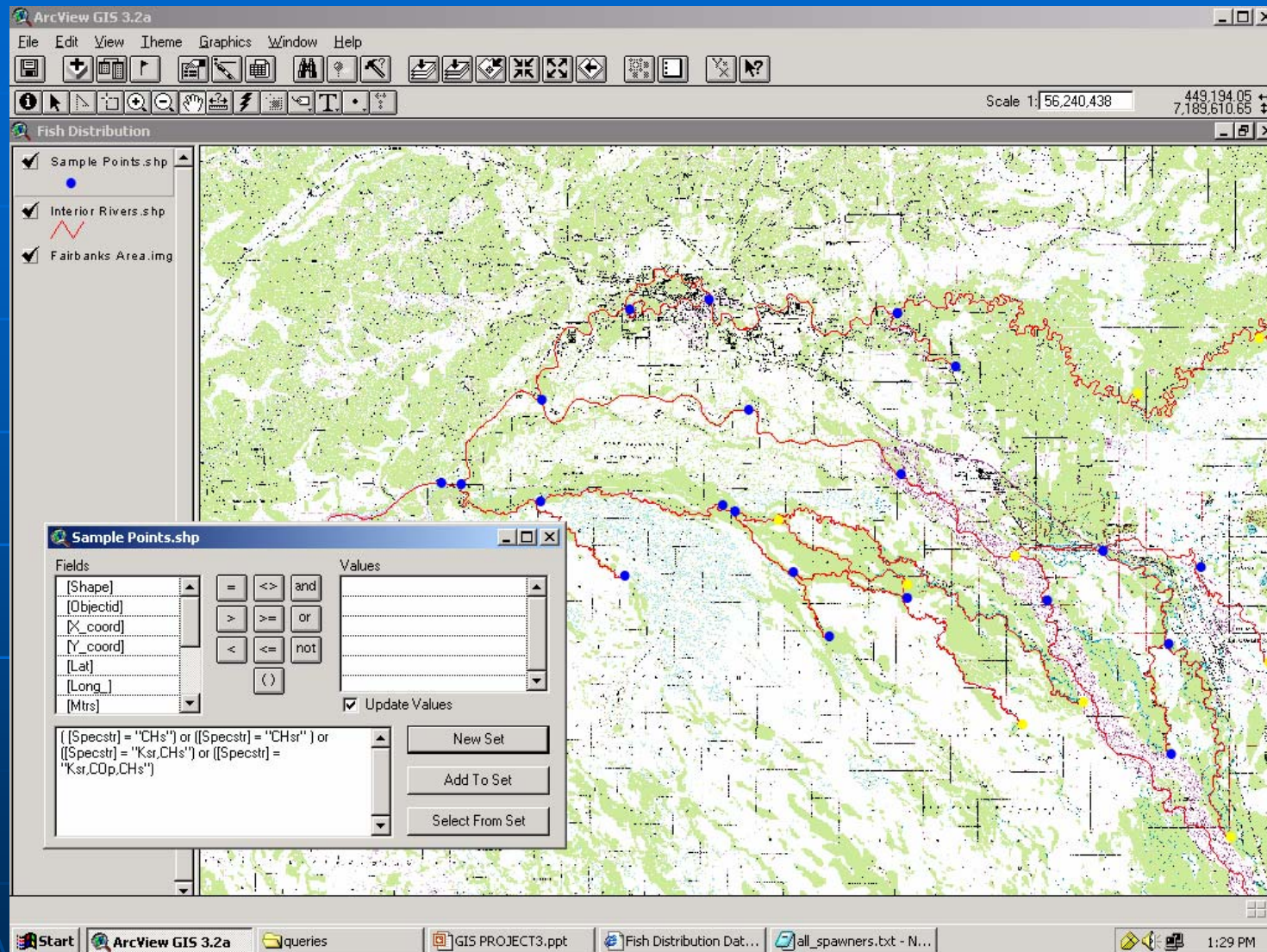
Results – Survey Point Data

Results - Locations

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Conclusion

- Three Species of Salmon spawn within 40 Miles of Fairbanks. King and Chum in the Tanana drainages and Coho in the Chatanika drainages.

- Teachers in schools anywhere in Alaska can create lessons to teach GIS with readily available data sets and inexpensive educational versions of software.

The Future

- The power of GIS can be introduced to students at an early age. There is a growing need for people with the knowledge and abilities to create, manage, and analyze the information systems needed for decisions about our natural and man made environments. GIS is a tool of the future available today.

Thank You

- **Neal Brown** - Alaska Space Grant Program
- **Rebecca Lees** - Program Coordinator
- **IARC, NSF, UAF**
- **Anupma Prakash** – Instructor
- **Gary Cooper** – Instructional Assistant
- **Bill Tittle** - Lab/GPS – NSF
- **Classmates** – Larry Terch, Tim Buckley, Dave Cox, Patricia Cromer, Kay Holmes, Marilyn Krause, Steve Paskvan, Roger Price, Lori Schoening, Matt Steffes, Mary Wyatt, Don Berberich

Resource References

- Chinook Salmon Picture – USFWS Cyber Salmon Web Site
  http://cybersalmon.fws.gov/chin.html
- FDD GIS data files for Interior Rivers and Anadromous Fish observation points – Alaska Fish and Game
  http://www.sf.adfg.state.ak.us/SARR/FishDistrib/anadcat.cfm
- USGS Topographic Maps – Geotiffs, Digital Raster Files

http://agdc.usgs.gov/data/usgs/geodata/drg/temp/drglist_F.html