



2006 GIS Jam Technical Presentations

February 15 and 16, 2006

Wednesday, February 15, 2006

<u>Time</u>	<u>Title</u>	<u>Author(s)</u>	<u>Room</u>
Track A:	GPS and Geodesy	Moderator Dayle Sherba	Dillingham / Katmai Room
8:00	Eradicating Shapefiles? Moving a GPS Mapping Project into a Geodatabase	Joel Cusick, Jeff Heys, Penny Bauder, National Park Service	
	To facilitate the management of non-native plants in Alaska's National Parks, the Exotic Plant Management Team has been mapping infestations using Trimble GPS receivers, TerraSync Field Software and a nationwide data dictionary for two field seasons. Traditional workflow created dozens of shapefiles each year, hindering historical spatial analysis and management of data. Trimble's GPS Analyst extension allows SSF files to be converted directly into existing Geodatabase format, thereby by-passing Trimble's Pathfinder Office. This presentation discusses the trials and tribulations of eradicating shapefiles from the workflow and moving into a Geodatabase.		
8:30	ArcPad Custom Tools for Alaskan Geologists	Michelle Pearson, Calista Corporation	
	This presentation showcases a customized ArcPad(ver 6.X) applet designed by a geologist for geologic field mapping using Global Positioning Systems (GPS) receivers and field data collectors. Detailed in-field symbology, and data management are tightly controlled offering robust data collection strategies. Examples of ArcPad data entry forms for rock and soil sampling used at the Nyac gold project and other Alaskan exploration prospects will be shown.		
9:00	Mapping Topography for Viewshed Analysis in the Brooks Range: An Example from Archaeology	Aaron Wilson, National Park Service	
	Landscape and topography studies are currently hot topics in archaeology. A 60m DEM for much of Alaska is largely useless for the kinds of local-scale analysis important to archaeologists. As part of a field season, the Gates of the Arctic National Park cultural resource management crew used a Trimble GeoXT and a Hurricane L1 antenna to map archaeological features around Agiak Lake in the central Brooks Range. The GPS was also used to map the topography of the valley, with a view of success, in order to produce a more usable DEM of the area.		
Track B:	CAD and GIS	Moderator Luke Bogess	King Salmon / Iliamna Room
8:00	AutoDesk 2006: Mapping and GIS	Ian Miller, Surveyors Exchange	
	Customers have made huge investments in their data and software. We do not wish to disrupt their processes, rather, with Map 3D, we are providing tools that give customers options. Our open, flexible tools do not require that customers replace their other software – rather Map 3D is a compatible tool for precision data editing – no matter what format. In fact, it is the best, most precise tool for data editing on the market today.		
8:30	SDSFIE for GIS and Autocad	Becci Anderson and Christina Lett, Elmendorf Air Force Base	
	Spatial data standards are efficient and easily employed methods for increasing consistency in data development, definitions, and exchange. This talk will examine the Spatial Data Standards for Facilities Infrastructure and Environment (SDSFIE) and will demonstrate several free tools developed to integrate these standards into ArcGIS and AutoCAD data. SDSFIE is maintained by the CADD/GIS Technology Center, whose members range from the Department of Defense to the Smithsonian Institution. SDSFIE can be implemented in any GIS or CAD mapping system, and using it promotes data interoperability, data sharing, data dissemination, application development, metadata generation, and a variety of additional benefits.		
9:00	CAD to Feature Class: Tips and Tricks	Ryan Dalton, ESRI	
	Many users have valuable data stored in CAD drawing files that could, and in some cases should, be incorporated into their corporate GIS datasets, or used to enhance analysis for individual projects. This session will discuss a variety of tools, methodologies, and design concepts you should consider employing in order to simplify the incorporation or migration of your CAD data into existing GIS data layers or projects. To demonstrate these concepts and processes, we will be using ESRI's ArcGIS Desktop core tools as well as the Data Interoperability extension.		
9:30 - 10:00	BREAK		
Track A (con't):	GPS and Geodesy	Moderator Joel Cusick	Dillingham / Katmai Room
10:00	Plate Boundary Observatory - Action in Alaska	Ben Pauk, UNAVCO Inc., Plate Boundary Observatory	
	As of October 1st, 2005, the Alaska regional office of the Plate Boundary Observatory has installed 35 of its planned 116 permanent Global Positioning Systems (GPS) stations throughout the state of Alaska. Currently, daily data files are available from 28 of the 35 installed GPS stations through the UNAVCO data archive on the UNAVCO website. The Alaska regional staff plans to install an additional 30 stations during the 2006 field season, as well as conduct reconnaissance at 45 locations throughout the state of Alaska to install the remaining 51 stations during the 2007 and 2008 field seasons. In addition to the installs and reconnaissance, the Alaska regional staff will also upgrade stations currently not online with satellite transceivers or other reliable data communications methods in 2006. As of October 1st, PBO has installed 260 stations nationally and plans to install an additional 250 stations in 2006.		
10:30	The Right Place - The Promise and the Peril of Using GPS for GIS	Michael Dennis, Shephard-Wesnitzer Inc.	
	GPS is used for a wide variety of mapping and surveying applications and is often employed for populating, verifying, and controlling GIS databases. Although GPS products have become very easy to use, it is also easy for users to generate erroneous results. This problem persists despite the efforts of vendors to streamline and simplify the GPS positioning process. To illustrate the problem, much of this presentation is devoted to showing the types of positioning errors that can and do occur when using GPS, both for mapping and surveying applications. The overarching goal is to make the geospatial community aware of the importance and complexity of ensuring their data are rigorously georeferenced that is, in the right place.		
Track C:	Automation	Moderator June Finkbiner	King Salmon / Iliamna Room
10:00	Using ESRI Model Builder To Increase Efficiencies	Ryan Dalton, ESRI	
	Introduced at ArcGIS 9.0 as part of the new geoprocessing framework, Model Builder is a visual editor for designing geoprocessing work flows. Through the Model Builder interface, geoprocessing tools can be tied together in a visual model that keeps track of the data sets, processes, parameters, and assumptions. Geoprocessing models can be created, saved, and rerun using different input data and function parameters, enabling users to readily explore alternative scenarios. In addition, models can be saved as scripts, providing a good starting point for programmers to build custom tools.		
11:00	ArcGIS & Python Scripting	Dave Verbyla, UAF	
	Python Scripting session is an introduction to geoprocessing scripting using Python, which is part of the ArcGIS9 installation. You will learn how to export a geoprocessing model to a Python script, how to validate and debug Python scripts, and how to write a script to execute repetitive geoprocessing tools.		

12:00 – 1:30 **AAUG Lunch Meeting – GIS Map Showcase**

Aspen / Spruce Room

Track D: How Do I Get There?

Moderator Jay Johnson

Dillingham / Katmai Room

1:30 Projection and Datum Transformations in ArcGIS: Tools and Scripts for Alaskans

Melita Kennedy, ESRI

As Alaskans move towards updating mountains of legacy data into NAD83 (North American Datum of 1983), a recurring theme is "Which coordinate system should I use to store my data, and how do I do it?". ESRI's own projection guru, Melita Kennedy, will provide a demonstration of various tools to apply the correct datum transforms in the ArcGIS environment as well as tips for correcting data alignment horrors. Automating these steps will also be discussed.

Track E: Editing

Moderator Will Lentz

King Salmon / Iliamna Room

1:30 Editing with ArcGIS: Tips & Tricks

Tim Weisenberger, ESRI and Rob Siciliano, US Fish and Wildlife Service

Editing in ArcMap can be easy and efficient. ArcGIS offers many tools for creating and maintaining your GIS database. Most editing tools are used to manually create and modify database features, while others are used to transform and assemble entire datasets. This session will provide useful tips and tricks for working with editing tools and sketches to construct vector geometry. We will also cover data production techniques for edge matching and rubber sheeting.

3:00 – 3:30 BREAK

Track D

(con't): How Do I Get There?

Moderator Joel Cusick

Dillingham / Katmai Room

3:30 Alaska GIS – North to NAD83

Richard Clement, ADNRR; Michael Dennis, Shephard-Wesnitzer Inc; Jennifer Dowling, NOAA; Mel Philbrook, Trimble; Melita Kennedy, ESRI;

This panel addresses the quandaries you encounter when transforming GIS layers from NAD27 datum to NAD83. This panel will build your confidence or comfort level in moving your data; what you need to know before you jump and selecting the right tool to transform. Panel members include ESRI's own projection guru Melita Kennedy and Trimble's Mel Philbrook who can bring industry tips. Michael Dennis brings a non-vendor approach to datum shifts, while Richard Clement and Jennifer Dowling bring a statewide perspective.

Track F: GIS in the University

Moderator June Finkbiner

King Salmon / Iliamna Room

3:30 Learning to Be Spatially Relevant: GIS Education in Alaska's Universities

Jason Geck, Alaska Pacific University; Dave Verbyla, University of Alaska Fairbanks; Sanjay Pyare, University of Alaska Southeast; Steve Buchanan, University of Alaska Anchorage

Alaska universities are becoming more responsive to the desires of its students and continue to develop relevant coursework and programs to create highly skilled and knowledgeable GIS scientists. Come see how the GIS industry and our local universities benefit from this partnership.

Track A: Jam Grab

Moderator Dan Rathert

Dillingham Room

8:00 Alaska's Shorezone Mapping System

Kristin Mabry and Jim Noel, National Marine Fisheries Service; K Koski, The Nature Conservancy

The biophysical ShoreZone Mapping System has presently been applied to over 10,000 miles (~16,000 km) of shoreline in Alaska. To date, the Alaska ShoreZone Mapping efforts have involved collections of field imagery, classification and mapping, compilation of standardized GIS datasets, and construction of an ArcIMS website. The current system is on-line at mapping.fakr.noaa.gov/Website/ShoreZone and will expand geographical extent as more data is centralized and served up in 2006.

8:30 New Muni Project Work Applications (ArcIMS)

Fred Carpenter, Municipality of Anchorage

In December 2005, the Municipality of Anchorage released a new web application called MyNeighborhood. MyNeighborhood is a first step toward the mayor's goal of providing a one-stop experience for citizens trying to get information online from local government. Information from many city agencies has been pulled together and is organized by themes which include public safety, health and family, education, recreation, property, and local services. Some of the specific information in the themes include fire stations, police stations, schools, zoning cases, census, bus stops and much more. As project director, Fred will take you behind the scenes of the project, discussing the GIS activities and web integration tools that made this possible. He will also discuss data collection methods for the new site, highlighting the geodatabase and web technologies that were used.

9:00 Working with Publisher

Rob Siciliano, US Fish & Wildlife Service

Incorporating the use of Publisher & ArcReader into the US Fish & Wildlife Service's daily work. It was a 2-cause case for using these software tools for our workplace. First, in an effort to evolve towards a more user-friendly environment, the map-intensive Land Protection Plans put out by the Division of Planning. We found it to be a far superior to the previous system. The ability of the end user to view only what was important to them. Secondly, allowing non-GIS users to access our system without having to seek out a GIS user to generate the answers they needed.

Cancelled

Track B: Internet Mapping

Moderator Aaron Richins

Katmai / King Salmon Room

8:00 Old Dogs and New Tricks: ArcIMS and Google Earth

Mark Pearson, GeoNorth Inc.

So, you've spent all that time and money on an ArcIMS implementation and one day your boss sees Google Earth, and asks "why can't we have that?". You Can This session will cover some newer features and tricks with ArcIMS, the Google Earth programming interface, and options for integration.

8:30 Geospatial One-Stop: What's in it for Alaskans?

Robert Dollison, Geospatial One-Stop

An updated Geospatial One-Stop Portal, (www.geodata.gov) is now available with many new capabilities and features that provide easy searching and discovery for a wide variety of geospatial data, mapping services and applications. This session will give you a jump start on understanding how you can take advantage of these new tools for discovering and sharing spatial resources and web mapping services to support your business processes and decision support needs. In addition this session will demonstrate how to use and participate in the geodata.gov ?Partnership Marketplace? to help make your data acquisition dollars go further.

9:00 Facility Location Improvement Project

Torsten Ernst , AK Dept Environmental Development, Mark Pearson, GeoNorth, Inc

Using location and web services to integrate data from different environmental program databases, The Alaska Department of Environmental Conservation (DEC) needed a way to acquire spatial information for regulated sites and facilities stored on approximately 30 databases while developing a linking mechanism between them. To address this, the Department has created a web service-based system to standardize the collection of spatial data by developing an application to handle the collection and storage of spatial data, independent of the client databases. This system uses locations as the mechanism to link disparate databases throughout the Department. The system uses C#.net web services, an ESRI SDE database, ESRI ArcIMS, base data from ESRI SDE, Semaphore ZP4 Zip+4 database and MapDotNet Map Web Services and Client controls.

9:30 - 10:00 BREAK

Track C: GIS and Ecology

Moderator Dorothy Mortenson

Dillingham Room

10:00 Managing Bears and Humans in Alaska's National Parklands Using a Regional Data Management System: The Power of BHIMS (Bear/Human Information Management System)

Terry D. DeBruyn, U.S. National Park Service; Thomas S. Smith, U.S. Geological Survey; Angie Southwold, National Park Service; James Wilder, US Fish and Wildlife Service

To standardize data collection and analyze patterns in bear/human interactions across Alaska's National Parklands, we developed the Bear/Human Information Management System (BHIMS). This Access database application allows entry, storage, and analysis of disparate data. The BHIMS stores bear sighting, harvest, natural history and bear/human interactions records. Scanned documents and photographs are linked to records. A component of the BHIMS is the integration of the NPS Arc2Ax dynamic link allowing queries of records in BHIMS based on user-defined criteria; selected records are then linked to ArcGIS/ArcView enabling spatial display of records meeting the specified criteria. This system represents a powerful management tool that allows easy data entry and analysis and facilitates informed bear management.

10:30 Fish, Moose and Remote Addressing in the Kenai Peninsula Borough

Katie Rogers, Kenai Peninsula Borough

The borough encompasses a total of 25,600 square miles, of which 15,700 square miles are land. This includes 5 incorporated cities and multiple villages. Addressing in Alaska is an exciting, challenging job that requires insight and inventive problem solving. The Kenai Peninsula Borough Planning Code still allows parcels to be landlocked and does not require construction of dedicated streets with the subdivision. Parcels are sometimes hundreds of miles from a dedicated road, and the access is by boat, plane or atv. The telephone company requires owners to have a situs address assigned by the Borough to get phone service. Many times they are assigned addresses off of dedicated streets that aren't built; if that isn't an option we assign a remote address. Our remote addressing system was derived from our current code, but lacks precision. A remote address will get the responders to the area, but not always to an exact location. In the future with the implementation of CAD in our dispatch centers we hope to refine the remote addressing system. Until then, we are working on getting the responders within ten miles of the call.

11:00 Using GIS and a Spatially Explicit Modeling Approach to Foster Conservation Planning in Tongass Landscapes

Sanjay Pyare, University of Alaska, Southeast

The Conservation Strategy of the Tongass Land Management Plan explicitly incorporates spatially explicit conservation elements, such as delineation of an old-growth reserve network, that are important for landscape level conservation management. Although hotly contested, the effectiveness of the Strategy has only begun to be tested. GIS-based, spatially explicit modeling tools for predicting and quantifying the effects of alternative land management practices. I will discuss modeling approaches that highlight at least 2 ongoing case studies in reserve design and recreation management that incorporate predictive GIS modeling approaches. I will also discuss possible future applications in Southeast Alaska.

Cancelled**11:30 Analyzing Private Lands for Forest Stewardship Potential - A Model Builder Approach**

Hans Buchholdt, AK Dept. of Natural Resources

The Alaska Forest Stewardship Spatial Analysis Project (SAP) is part of a national U.S. Forest Service effort to measure the impact of the Forest Stewardship Program on forest resources across the landscape, coupled with a desire to strategically deliver the Forest Stewardship Program in the future. The SAP utilized and enhanced the existing Alaska Division of Forestry's GIS capabilities and will accommodate a variety of related forestry and watershed programs.

Track B**(con't): Internet Mapping (con't)****Moderator Aaron Richins****Katmai / King Salmon Room****10:00 Server GIS; ArcGIS Server and ArcIMS****Tim Weisenberger, ESRI**

We will take a look at ArcIMS, ESRI's GIS web publishing software that meets the needs of corporate intranet networks along with the demands of worldwide internet access. With the release of ArcGIS 9, ESRI introduced new technology for supporting enterprise GIS where ArcGIS server is a centralized approach to implementing GIS solutions that follow IT standards. Come and visualize how GIS business logic, once based solely on ArcGIS desktop, can now be implemented in a multi-user environment. Learn how an organization can build one solution and deploy it to many clients and users.

12:00 – 1:30**Lunch****Track D: Jam Grab****Moderator Melanie Hans****Dillingham Room****1:30 The Modern GIS Professional: Changing with the Tides****Marshall Payne, GeoNorth, Inc**

In 2000 GeoNorth began to take notice of both technology changes as well as organizational changes that were occurring in the GIS profession. Since early 2002, we were seeing the consolidation of both GIS departments and staff. Many GIS departments are now being absorbed in to IT departments. While departmental GIS remains, it has undergone significant change due in part to economics, organizational awareness of GIS benefits, and enhancements in GIS technology. No longer is GIS a "black-box" department. Spatial data stored in standard databases, internet mapping technology, and development environments such as VB, Java, and .NET have rapidly mainstreamed GIS into the IT world. This presentation will focus on the new classification of GIS professionals and how the evolution of GIS continues to change organizations.

2:00 The New Status Plat Map Production System at DNR**Richard Clement, Alaska DNR**

DNR has been creating Status Plats since Statehood. Originally, these maps were fashioned after the BLM Master Title Plats and were produced manually by cartographers. Over the past 20 years, DNR has migrated this work to computerized systems using Synercom and ArcInfo. The "look and feel" of the maps remained nearly the same, a black and white map using offset lines to show the locations of features. In the last 3 years, DNR has completely reengineered these to become a color map product. A new editing and map production system has been created that allows multi-user editing using custom editing tools, map templates and workflow processing. The underlying database structure has dramatically changed from a file based system to an enterprise database using the latest in geospatial technologies.

2:30 Integration of GIS at the NOAA - West Coast/Alaska Tsunami Warning Center**Paul Whitmore, West Coast/AK Tsunami Warning Center**

Paul Whitmore will present the use of automated geographic information systems in use at the West Coast/Alaska Tsunami Warning Center in Palmer Alaska. Paul's work with the mapping systems are responsible for improving tsunami warning products and graphics for the Gulf of Alaska and beyond.

Track E: Databases**Moderator Amy Puerner****Katmai / King Salmon Room****1:30 Database Design Workshop****Angie Southwold, National Park Service**

Latest GIS technologies allow data to be stored in relational databases. Multiple tables, spatial or tabular, can be related to one another through common fields providing benefits to GIS data and applications that would not otherwise be possible. Compared to flat files, such as spreadsheets and shapefiles, relational databases allow users to more accurately model real-world scenarios. Good, consistent, database design becomes extremely important as these more complex databases are developed. Join Angie in this workshop where she will cover the foundations of a relational database and strategies for good relational database design.

3:00 – 3:30**BREAK****Track F: Getting There****Moderator Amy Puerner****Dillingham / Katmai / King Salmon Room****3:30 The Road Ahead****Tim Weisenberger, Ryan Dalton and Melita Kennedy, ESRI**

ArcGIS 9.2 will be a full release of ArcGIS Desktop (ArcReader, ArcView, ArcEditor, and ArcInfo), ArcGIS Engine, ArcGIS Server, ArcIMS, and ArcSDE. This session will provide an overview of the major developments in the ArcGIS 9.2 release that were introduced during the Users Conference in San Diego.