

8th Annual

Oklahoma SCAUG Conference

October 6th, 2005



**Moore Norman Technology Center
4701 12th Ave NW
Norman, OK**

Table of Contents

Welcome	1
Keynote Speaker	3
Conference Map	4
User Presentations	5
Technical Breakout Sessions	8
ESRI Technical Sessions	8
User Poster Presentations	9
Sponsors	13
Agenda	15
Vendors	17
Conference Notes	30

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Christopher Cappelli currently serves as a Director of ESRI, Inc., & oversees domestic sales (both direct & indirect channels) & the worldwide business partner program. From 1999 to 2004 he was the Regional Manager of ESRI's office in Philadelphia, Pennsylvania. Prior to that Chris served as a Consultant in ESRI's Charlotte, North Carolina office where he managed projects involving the design & development of solutions. Prior to joining ESRI he worked as a GIS Analyst at a large photogrammetric mapping company. Chris is currently serving on the board for the Penn State's online masters of geographic information systems degree program. Chris has a BS degree from the Pennsylvania State University in Geography with an emphasis on geographic information systems.



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User Presentations

Title: **ArcView Editing with ArcGIS Server via XML Web Services** by Genaro L. Garcia, Jr., City of Oklahoma City

Abstract: The City of Oklahoma City has 17 ArcInfo & 25 ArcView licenses at this time. With the increasing number of Departments maintaining their own data, we are utilizing all our ArcInfo licenses. The solution is to use our ArcView licenses for light editing through the ArcServer via XML Web Services. This presentation will outline the processes & the benefits.

Title: **Linking Oklahoma Congenital Heart Defects (CHD) with Environmental Hazards Data** by Elizabeth Kruger & Kay Pearson, Oklahoma State Department of Health, Hub Baggett & Monty Elder, Oklahoma Department of Environmental Quality

Abstract: Congenital Heart Defect (CHD) is believed to be caused by both genetic factors & environmental factors. Environmental hazard exposures associated with congenital heart defects include trichloroethylene, tetrachloroethylene, benzene, heavy metals, dioxins, & pesticides. The objective of this project is to determine relationships between congenital heart defects & environmental hazards.

Title: **Introduction to the Web Atlas of Oklahoma**, by David Dill & Nelson Dobbs, Department of Cartography & Geography, ECU

Abstract: A new thematic atlas of Oklahoma has been constructed by faculty & students in the Department of Cartography & Geography at East Central University. Its subject matter incorporates a wide range of both human & natural phenomenon important to the understanding of defining Oklahoma as a place. State maps are being used to show parochial geographic patterns, with an integration of U.S. maps to depict how Oklahoma compares & contrasts nationwide. The product is web-based, meaning it is architected to be viewed using a web browser such as Netscape or Internet Explorer. The atlas is designed to appear like a hardbound book, whereby a pc mouse acts as the user's "hand" to turn pages & reference topics via a table of contents or index. While the atlas spatially portrays subjects utilizing traditional cartographic forms such as choropleth, isarithmic, dot, & proportional symbol maps, its computerized mode of delivery enables user interactivity not possible with a hardcopy format. Many of these interactive capabilities will be demonstrated during this presentation.



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User Presentations

Title: GIS & the Development of the 2030 Oklahoma City Area Regional Transportation Study (OCARTS) Plan by John Sharp, ACOG

Abstract: Central Oklahoma's highways, skyways, bikeways, bus routes, railroads & truck corridors provide mobility for more than a million people, & serves as a crossroads for the state & national economy. Planning for the future transportation system requires a comprehensive plan built on analysis of historical conditions & future goals, involvement of residents, & consideration of all transportation modes. Development of the 2030 OCARTS Plan began with the assessment of current conditions & identification of anticipated needs. GIS compatible computer models assisted in replicating future traffic demand on the regional street & highway network. GIS tools were also used to depict other modes of transportation such as bike paths & public transit routes. The presentation will discuss methods & data layers required by GIS-based population & employment growth allocation models.

Title: Using GIS to Empower Planning Departments by Carrie Landgraf, Geographic Information Services, Inc.

Abstract: Explore how GIS is used in planning departments to automate & streamline a lot of the repetitive tasks. This presentation will focus on two ArcGIS extensions built specifically for planners. First we will look at how GIS is used for managing land use & zoning workflows in a typical planning office. Using a zoning case management system to manage the entire case cycle, from identifying parcels, automated merging of data, to generating notification documents. Using a custom GIS tool we will look at simulating parcel-level buildout that conforms to a municipality's environment & zoning constraints, as well as identify better ways for existing development to improve its use of the land.

Title: Using Locarta AVL, Map Objects, & ArcIMS To Track City Vehicle Locations, by Chris Ksepka, City of Oklahoma City

Abstract: The City of Oklahoma City purchased AVL services to track the locations of 26 City vehicles. Their location data is stored in an Access database which is compatible with the City's existing GIS. This allows us to leverage Map Objects to transform that data into an ESRI shape file. ArcIMS then makes vehicle locations available to users across our intranet. Travel maps & location reports for individual vehicles are produced using ArcMap & Access. This presentation will detail the steps used to setup this system, plus the benefits of having it in place.

User Presentations

Title: **Computer Assisted Mass Appraisal** by James Mallory, OK County Assessors Office

Abstract: To integrate our public access system & our CAMA system (Computer Assisted Mass Appraisal), with our GIS data inside our Arclms site. To provide user friendly applications allowing our users to access & output GIS layers, orthophotos, assessment data, ownership information, building attributes, property descriptions, sales data & more.

Title: **GIS: A New Tool for Oklahoma's Rural Health** by Chad E. Landgraf, Oklahoma State University, Center for Health Sciences

Abstract: The responsibilities of the Oklahoma State Office of Rural Health & the Oklahoma Rural Health Policy & Research Center are to increase patient access to quality healthcare in rural areas, support the economic viability of rural hospitals & support doctors, nurses & other healthcare providers practicing in rural Oklahoma. To accomplish these goals, both agencies help shape legislation & policy generated at the local, state, & federal levels, & they also provide direct assistance to various stakeholders including local communities & healthcare organizations. These initiatives rely upon a wide-range of spatial & non-spatial data, often derived from disparate sources. The utilization of GIS-based technologies represents a logical progression as the need for more sophisticated data analyses, integration, & manipulation methodologies continues to grow. This presentation will provide a brief synopsis of how both agencies are currently utilizing GIS in their day-to-day operations, & how GIS will influence future research & outreach endeavors.

Title: **Building a GIS Complete®: An Example from the City of Owasso** by Eric Jones, SCI

Abstract: The implementation of a GIS for any organization can be daunting. From the initial needs assessment to the final implementation, the process of constructing an effective & appropriate GIS database requires many man-hours & a high level of expertise. GIS Complete® is a solution to this problem. Designed to help municipalities develop an enterprise GIS, GIS Complete® provides a hosted solution, freeing the municipality from data creation/maintenance, increased IT hardware/software & personnel requirements. The municipality can focus on using the data instead of creating, housing & maintaining it. We will present the conceptual overview of GIS Complete® & demonstrate its success with a case study of the City of Owasso.



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Technical Breakout Sessions

Title: **Labeling Tips & Tricks** – Ray Hardy
 ArcView labels
 Annotation within ArcMap
 Annotation within the Geodatabase
 Creating dynamic annotation with scripts
 Maplex labels
 Adobe Illustrator cleaning up a good map

Title: **The Database Connection** - Sara Cobb
 Issues related to joining & relating tables in ArcGIS

Title: **GPS Issues** – Julie Parker
 Accuracy
 Postprocessing
 Data types
 GPS Extension
 GPS Toolbar
 Bringing in GPS data to ArcView
 Digital photos & GPS

ESRI Technical Sessions

Title: **What's New in ArcGIS** - An overview of what is new at 9.1 & what is coming down the road for 9.2

Title: **ArcIMS Performance Tips & Trick** - Setting up, Configuring & Managing an ArcIMS web site for optimal performance

Title: **Editing in ArcGIS** - Useful tips & tricks for working with editing tools



Title: Mapping Plant Species In Space & Time Using Data Obtained From Herbarium Specimens, by P.H.C. Crawford & B.W. Hoagland, Oklahoma Biological Survey & Dept of Geography, OU

Abstract: Ecologists want to understand the temporal & spatial dynamics of invasive species. In several studies, researchers have used information from herbarium specimens to map species spread. Many have found difficulties working with data from herbarium specimens because of changes in the intensity of floristic research over time. The objective of this study was to: map the increase in abundance & spatial spread of invasive species over time in Oklahoma using herbarium specimens & explore methods of eliminating herbarium collection bias. Data came from the Oklahoma Vascular Plants Database (OVPD) which contains information on all Oklahoma plant collections housed in the major herbaria of Oklahoma. We compared the accumulative number of collections of invasive species to the set of non-invasive species over time to determine the rate of species invasion. Invasive species maps were made by assigning Township & Range (9.66 x 9.66 km block) for each specimen based on location information in the OVPD. Mapping was hindered by lack of information associated with collections. 27% of specimens were unmappable due to missing locations or dates. Using the chosen techniques & of the species we examined only *Tamarix* spp. appears to be invasive over the last 90 years. However, our results indicate there were several periods during which invasive species disproportionately increased in abundance. In future research other problems inherent in herbarium data also need to be addressed such as: misidentification of specimens; "weedy" species typically ignored by botanists; & geographic collecting bias. The methods we implemented were originally developed in regions of a long period of intense floristic collection (Europe). Oklahoma has a relatively short botanical history punctuated by few substantial collecting efforts.

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Title: Streamlined Sales Tax Project by Scott March, Geo Information Systems, OU

Abstract: Oklahoma is one of forty-four states that are participating in a "Streamlined Sales Tax" project designed to radically simplify sales & use tax systems across the country. One component of that initiative involves a change to calculate these taxes based on point of delivery rather than point of sale, & that requires the ability to identify the sales tax jurisdiction for any given delivery address...and that requires a GIS application. Where are the sales tax jurisdictional boundaries? What addresses are within any given jurisdiction? How can that information be linked to all of the nearly 700,000 9-digit zip codes for the state, which is a requirement of the national Streamlined Sales Tax standard? Geo Information Systems has worked with the Oklahoma Tax Commission to develop the data system required to provide this functionality for Oklahoma. This poster provides an overview of the steps that have been taken to make that program successful.

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Poster Presentations

Title: **Developing Oklahoma's Comprehensive Wildlife Conservation Strategy By Using Arcgis**, by Julianne Whitaker Hoagland, Oklahoma Department of Wildlife Conservation

Abstract: In order to receive federal funds through the State Wildlife Grants program, Congress charged each state & territory with developing a state Comprehensive Wildlife Conservation Strategy (CWCS). These strategies will outline species & habitat priorities & the actions needed to conserve them. Six elements required to be included in the strategies are 1) information on the distribution of low & declining species that are indicative of the diversity & health of Oklahoma's wildlife; 2) descriptions of locations & relative condition of key wildlife habitats & vegetation community types essential to the conservation of identified species; 3) descriptions of problems which may adversely affect wildlife species identified or their habitats; 4) descriptions of conservation actions determined to be necessary to conserve the identified species & habitats; 5) proposed plans for monitoring; & 6) review procedures. The Oklahoma Department of Wildlife Conservation used ArcGIS to develop layers of existing wildlife & habitat information to assist in the development of the CWCS on a regional level. The Shortgrass Prairie Region is presented here as an example of the process & final product under development in the CWCS.

Title: **The City Of Norman Greenbelt Taskforce, Citizen Committee Uses Geographic Information System To Produce Greenbelt Recommendations** by Scott Woodruff, City of Norman

Abstract: The City of Norman 2020 Land use Plan called for the establishment of a Greenbelt System. The Norman City Council established the Norman Greenbelt Task Force to create a Greenbelt System Plan for the City of Norman. The task force, made up of approximately 30 Norman citizens, was given the task of gathering & examining information regarding the best ways to create & develop a Norman Greenbelt System & make recommendations to the Norman City Council. The task force was aided by City of Norman GIS staff in locating high priority areas for inclusion in the Greenbelt System. Available G.I.S. data was used to locate parcels that matched the selection criteria provided by the task force. These include parcels owned by municipal, institutional, or government organizations, parcels in the flood plain, parcels with significant soil types, & parcels with streams & riparian corridors. Parcels that met multiple criteria were given a higher priority. The Greenbelt Task Force then used selected areas to link established parks, bike paths, & recreational areas, to form recommended Greenbelt routes. The Greenbelt Task Force presented their recommendations to the Norman City Council & Greenbelt areas can now be given special consideration in future conservation & planning projects.

Title: **Distribution, Knowledge, & Demographics of Wind Power in Oklahoma** by Stephanie A. Buway, Oklahoma Wind Power Initiative

Abstract: The wind power industry is developing quickly here in the state of Oklahoma. Nearly all electric providers offer a way to purchase this renewable energy. For example, OG&E has their WindPower Program, OEC makes available the purchase of Renewable Energy Certificates, and Western Farmer's Electric Cooperative purchases and uses wind power from Blue Canyon Wind Farm. The Oklahoma Wind Power Initiative would like to show the distribution and demographics of those who receive their electricity from some of these programs.

The knowledge of wind power is also a fast spreading issue in Oklahoma. It is hard to find an Oklahoma resident who has not seen or heard about the wind turbines being constructed in the west. We want to show how the knowledge of wind power is distributed as well by using our database of Oklahoma WindCharger subscribers.

Title: **Emergency Management Planning With GIS** by Chris Hill, Meshek & Associates

Abstract: Emergency management is an important part of any community's infrastructure. Recently, Hurricane Katrina has reminded all of us how important it is to prepare for natural disasters. Metropolitan Tulsa is safe from the direct destructive force of a hurricane but is vulnerable to wind & rain from remnants of hurricanes in addition to Oklahoma's own severe storm season. With many of the communities along the Arkansas River near Tulsa protected by levees similar to those that were designed to handle the flooding in New Orleans, could a similar situation happen near Tulsa? Cities such as Jenks, Bixby, & Sand Springs are examples of communities protected by levees that are subject to failure from flooding during significant weather disasters. As recently as 1986, the Arkansas River, monitored by Keystone Dam, flooded its banks & most of Tulsa, including those towns with levees. Should an event like this occur again, how would local emergency managers respond to the potential loss of life & property?

Today's emergency managers have the tool of GIS available to them for scenario development & disaster planning. Using flood modeling techniques, the expanse & extent of flooding can be mapped & employed to protect citizens & from deadly flooding disasters. The objective of this poster is to use GIS to provide a visual flooding disaster scenario for the city of Sand Springs. Levees protect most of Sand Springs from the Arkansas River flooding during normal rain events & even flooding up to the '100-year' storm. Using visualization through GIS, events such as levee failure & storm flooding that exceeds the '100 year' storm will be surveyed. The city of Sand Springs will be able to use the model to determine the extent of flooding & be able to utilize it for strategy in the event of a major storm event.



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Julie A. Parker
 GIS Coordinator
 The Benham Companies, Inc.
 3700 W. Robinson, Suite 200
 Norman, OK 73072-3639

405.701.3125 (office)
 405.627.6158 (mobile)
 405.364.1708 (fax)
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Title: **Getting Dirty With GPS & GIS** by Michael Disney, Department of Geography, OSU

Abstract: Mrs. Swart's 2nd, 6th & 7th hour Environmental Science classes at Hennessey High School used GIS (Geographic Information Systems) & GPS (Global Positioning Systems) technologies provided by RAISE & Oklahoma State University to enhance laboratory experiments in the classroom. While studying soil formation & classification, the students conducted their own soil analysis project. They mapped sample sites with different soils in class & then set out to test each of the sites to determine soil texture, pH, & drainage rates on their own. Upon completing their experiments, the students compared their results with pre-existing data for each of the sample sites. When their results did not agree with pre-existing data they were forced to think outside the box & discuss why their results, as well as the pre-existing data, could in fact both be correct.

Title: **Trash It! GIS/GPS Integration For Community Change** by Brad W. Watkins & Mike Larson, Department of Geography, OSU

Abstract: Students in science at Perkins-Tryon Intermediate School are receiving first-hand knowledge of geospatial technology for real-world problem solving. As part of a unit on the environment & recycling in a 6th grade life science class, students participating in the Rural Alliance for Improving Science Education (RAISE) program set out to clean up their campus by creating a map of litter. They used GPS technology to record locations of litter & trash receptacles, brought the data into ArcView 3.3, & analyzed the map to develop a relocation plan of trash receptacles on campus. The goal was to place receptacles at strategic locations around campus based on high-traffic & low-traffic areas in an effort to minimize litter & beautify their campus. Their efforts paid off as their principal agreed to rearrange the receptacles based on information presented by students.



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Kevin Koon
Sr. GIS Specialist
Central Land / GIS
kevin.koon@dv.com

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Fax: 1-405-235-2610

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Roger L. Stack, C.P.
5730 NW Parkway, #500
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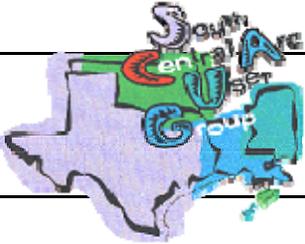
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A G E N D A

8th Annual Oklahoma SCAUG Conference Agenda

07:30 08:25		Registration opens with Vendor Exhibits - <i>Dining Area</i>	
08:30 10:00		Welcome - Opening Keynote Breakfast with Christopher Cappelli, ESRI ESRI Doctors Office - <i>Dining Area (all Day)</i>	
10:00 10:45		Vendor Break - <i>Visit with Vendors & Vendor Bingo</i>	

User Presentations

	<i>Will Rogers Room</i>	<i>Wiley Post Room</i>	<i>Dewey Bartlett Room</i>
10:45 11:15	Genaro L. Garcia, Jr. - City of OKC	Elizabeth Kruger - OK State Department of Health	David Dill & Nelson Dobbs - Department of Cartography & Geography, ECU
11:20 11:50	James Mallory - OK County Assessors Office	Chad E. Landgraf - OSU, Center for Health Sciences	Eric Jones - SCI
11:55 12:25	John Sharp - ACOG	Carrie Landgraf - Geographic Information Services, Inc	Chris Ksepka - City of OKC

12:30 01:45	Lunch/ Poster Competition - <i>North Dining Area</i>
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Technical Break Out Sessions

	<i>Will Rogers Room</i>	<i>Wiley Post Room</i>	<i>Dewey Bartlett Room</i>
01:45 02:40	Labeling Tips & Tricks Ray Hardy	The Database Connection Sara Cobb	GPS Issues Julie Parker

ESRI Technical Sessions

	<i>Will Rogers Room</i>	<i>Wiley Post Room</i>	<i>Dewey Bartlett Room</i>
02:45 03:30	ArcIMS Performance Tips & Tricks	Whats New in 9.1	Editing in ArcGIS
03:35 04:20	ArcIMS Performance Tips & Tricks	Whats New in 9.2	Editing in ArcGIS

04:25 05:00	Closing Remarks and Prize Giveaways - <i>Seminar Room</i>
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