13th Annual User Conference

Conference Guide

Welcome to the 2003 South Central Arc User Group Conference!!! We are excited to bring this annual event to the great state of Oklahoma for the first time in SCAUG history. We have worked very hard to make this a FUN and INFORMATIVE event, so please take full advantage of what we have to offer. Meet some old folks and mingle with the many new faces of SCAUG. If you should have any needs during the conference, feel free to contact a SCAUG officer listed on the next page.

Special Thanks

A special thanks to these organizations for helping make this year's conference a success!

Bexar Appraisal District
Brazos River Authority
City of Fort Worth
City of Southlake
Freese and Nichols, Inc.
Geographic Computer Technologies
GeoInfo, Ltd.
Mississippi Department of Marine Resources
NTB Associates, Inc.
Oklahoma Water Resource Board
Tarrant County Public Health
Topographic Mapping Company
Town of Flower Mound
United States Geological Survey

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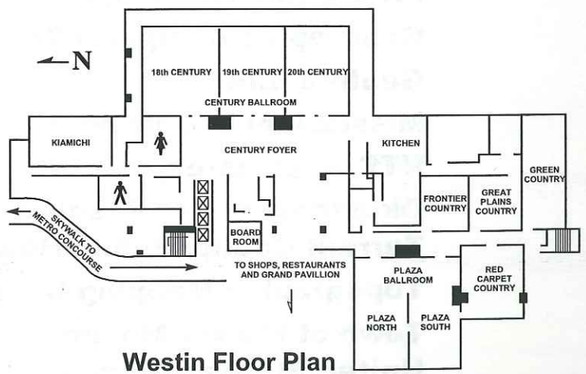
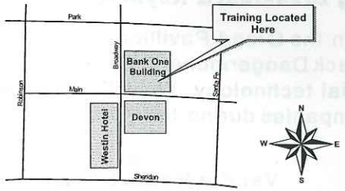


Westin Floor Plan

TRAINING - February 21st - February 24th

8:00am - 5:00 pm	ESRI Certified Training	Devon Energy @ Bank One Building

All trainees need to meet in the Westin lobby at 7:45am and go to the training location together.



DAY ONE - Tuesday, February 25th

7:00am - 6:00pm	Registration	2nd Floor
8:00am - 10:30am	Opening Breakfast & Keynote	Grand Pavilion
10:30am - 8:00pm	Vendor Exhibit Hall	Plaza Ballroom
11:00am - 12:30pm	User Presentations Session I	2nd Floor
12:30pm - 2:00pm	Lunch on Your Own	
2:00pm - 3:00pm	User Presentations Session II	2nd Floor
3:00pm - 3:30pm	Afternoon Break	2nd Floor
3:30pm - 4:30pm	User Presentations Session III	2nd Floor
5:00pm - 7:00pm	Map Gallery & Application Contest	Plaza Ballroom
5:00pm - 8:00pm	Vendor Reception	Plaza Ballroom

DAY TWO - Wednesday, February 26th

7:00am - 12:00pm	Registration	2nd Floor
8:00am - 4:00pm	University Competitions	2nd Floor (Kiamichi)
8:30am - 4:30pm	ESRI Doctor's Office	2nd Floor (Green Country)
8:30am - 9:45am	ESRI Technical Sessions I	2nd Floor
9:45am - 10:15am	Morning Break	2nd Floor
10:15am - 11:30am	ESRI Technical Sessions II	2nd Floor
11:30am - 1:30pm	Lunch on Your Own	
1:30pm - 2:45pm	ESRI Technical Sessions III	2nd Floor
2:45pm - 3:15pm	Afternoon Break	2nd Floor
3:15pm - 4:30pm	ESRI Technical Sessions IV	2nd Floor
5:00pm - 7:00pm	Awards Banquet	Plaza Ballroom
7:30pm - LATE	Evening Social in Bricktown	

We invite you to make full use of the conference and attend as many of the presentations as possible!!!

Opening Breakfast & Keynote

Join us in the Grand Pavillion for breakfast with the Founder and President of ESRI, Jack Dangermond!!! Come hear Jack's perspective on the world of geospatial technology. We will also be introduced to our vendor participants and their companies during the Vendor Spotlight at the Opening Breakfast.

Vendor Hall & Reception

Vendors will be exhibiting all of their newest technology and services from 10:30am to 8:00pm on Tuesday, February 25th in the Plaza Ballroom. Stop by to check out the latest and greatest products in the industry, and a vendor quite possibly may give you a "FREE DRINK" token to redeem at the Vendor Reception. Enjoy the fun, food and drinks at the Vendor Reception from 5:00pm to 8:00pm on Tuesday, February 25th in the Plaza Ballroom. Don't forget your bingo game card in your conference packet, because you just may be the lucky winner at our traditional game of Vendor Bingo!!!

Map Gallery & Applications Contest

Please plan to attend the Map Gallery and Application Contest on Tuesday, February 25th from 5:00p m to 8:00pm in the Plaza Ballroom. Cast your vote with the ballot in your conference packet to receive a limited edition 2003 SCAUG pint glass. Your votes will determine the winners of some very nice prizes.

University Competition

Stop by to support some talented upcoming "GISers" in the Undergraduate and Graduate University Competitions on Wednesday, February 26th from 8:00am to 4:00pm in the Kiamichi Room.

ESRI Doctor's Office

ESRI staff will be available to help with any technical questions you may have on Wednesday, February 26th from 8:30am to 4:30pm in the Green Country Room.

Awards Banquet

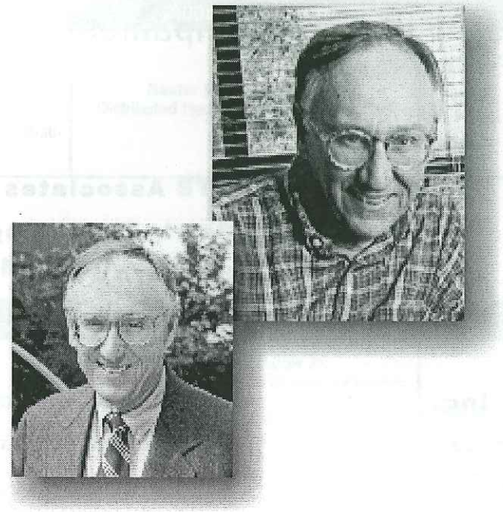
Our business meeting will be held during the Awards Banquet on Wednesday, February 26th at 5:00pm to 7:00pm. After dinner we will have some important topics to discuss, including a few words from our Regional President, Sheila Sullivan, winners from the Map Gallery & Applications Contest, winners from the University Competitions, and the announcement of the newly elected officers.

Bricktown Social

Unwind from the conference the traditional SCAUG way, and hit the town!!! Group will be gathering in the main hotel lobby after the Awards Banquet.

Jack Dangermond

Founder and President of ESRI



Jack Dangermond is Founder and President of Environmental Systems Research Institute, Inc. (ESRI), headquartered in Redlands, California, USA. Founded in 1969, ESRI is the leading Geographic Information Systems (GIS) company in the world, providing software like ArcInfo, ArcView GIS, and ArcExplorer to clients in 90 countries. Mr. Dangermond is recognized in both academia and industry as a leader of and an authority on the GIS field. Over the last thirty years, Jack has delivered keynote addresses at numerous international conferences, published hundreds of papers on GIS, and given thousands of presentations on GIS throughout the world. He is the recipient of a number of medals, awards, lectureships, and honorary degrees, including the 2000 LaGasse Medal of the American Society of Landscape Architects, the Brock Gold Medal of the International Society for Photogrammetry & Remote Sensing, the Cullum Geographical Medal of the American Geographical Society, the EDUCAUSE Medal of EduCause, the Horwood Award of the Urban and Regional Information Systems Association, the Anderson Medal of the Association of American Geographers, and the John Wesley Powell Award of the U.S. Geological Survey. He is a member of many professional organizations and has served on advisory committees for such U.S. agencies as NASA, EPA, NIMA, the National Academy of Sciences, and NCGIA. Jack was educated at California Polytechnic College-Pomona, the University of Minnesota, Harvard University's Laboratory for Computer Graphics and Spatial Design. Mr. Dangermond holds three honorary doctorate degrees from Ferris State University in Michigan , the University of Redlands in California, and City University in London.

Vendor Exhibit Day

Plaza Ballroom 10:30am - 8:00pm

Come by and visit with these companies:

ATS
Azteca Systems
CLR GIS Services
Geographic Technology Group
IT Nexus, Inc.
Laser Specialists, Inc.
Latitude Geographics
Leica Geosystems
Locarta Technologies, Inc.
NTB Associates
Petris Technology
Sanborn
Strategic Consulting International
Surdex Corp.
Tobin International Ltd.
Tri-Global Technologies LLC
Vieux and Associates, Inc.
Western Data Systems

Donations for the following events made by:

Opening Breakfast
Leica Geosystems
Vieux and Associates, Inc.

Vendor Reception
Laser Specialists, Inc.

Awards Dinner
Petris Technology

Morning & Afternoon Breaks
Western Data Systems

Tuesday, February 25th

FRONTIER COUNTRY

11:00am - 12:30pm	2:00pm - 3:00pm	3:30pm - 4:30pm
Marina M. Sukup & Hua Lu Developing a Successful Interactive GIS in Record Time on a Pittance **Duane Guidry** Dallas Central Appraisal District's New Multi-purpose GIS Web Site	**Baxter E. Vieux, PhD, PE** Distributed Hydrologic Model Using GIS	**Joyce Green, Larry Knapp & Michelle Matthews** I've Got Data & Software Now What Do I Do?: A Case Study in Wastewater Management

GREAT PLAINS COUNTRY

11:00am - 12:30pm	2:00pm - 3:00pm	3:30pm - 4:30pm
Greg Plumb An Algorithm (Avenue Script) for Population-Area Modeling in ArcView **Robert Maggio, Ph.D.** Field Automation & Workflow	**Robert L. Streeter Jr.** Simplifying the Land Development Process for Local Government with ArcIMS **Tanya Hardison** An Integrative Approach to Simulating Prescribed Fire in Northern Arizona	**Laura Carr** Getting the Data Out There – Using ArcIMS As A GIS Deployment Tool

GREEN COUNTRY

11:00am - 12:30pm	2:00pm - 3:00pm	3:30pm - 4:30pm
Steven Myhill-Jones Developing a Successful Internet Mapping Initiative Using ArcIMS	**Kurt Menking** Orthophotho Magic	**Sharon Davis Rogan** Leveraging ESRI technology for GeoBusiness Solutions

RED CARPET COUNTRY

11:00am - 12:30pm	2:00pm - 3:00pm	3:30pm - 4:30pm
Kathy H. Spivey Implementing a City-wide Geodatabase for the City of Killeen, Texas	**Stephen Brown** A Spatial Analysis of Illegal Dumping in San Antonio, Texas	**Barry Hanke** The GIS Academy – A High School /Community College Transition

Wednesday, February 26th

Migrating Coverages to Geodatabases - Guidelines for moving your existing data into a Geodatabase

Land Records Management - Land Records Management Tools at ArcGIS 8.3

What's New in ArcGIS 8.3

ArcIMS & The ArcMap Server - Extending your ArcMap Documents to the Internet including an overview of Metadata Server

ArcPad – Mobilizing Your Data - Moving your data to the field (includes overview of Disconnected Editing workflow)

ArcGIS Extension Overview - Abrief overview of the ArcGIS Extension Family

ESRI's Doctors Office - ESRI staff will be available to answer questions

FRONTIER COUNTRY

Session I 8:30am - 9:45am	Session II 10:15am - 11:30am	Session III 1:30pm - 2:45pm	Session IV 3:15pm - 4:30pm
Migrating Coverages to Geodatabases	ArcIMS & The ArcMap Server	Migrating Coverages to Geodatabases	ArcIMS & The ArcMap Server

GREAT PLAINS COUNTRY

Session I 8:30am - 9:45am	Session II 10:15am - 11:30am	Session III 1:30pm - 2:45pm	Session IV 3:15pm - 4:30pm
Land Records Management	What's New in ArcGIS 8.3	Land Records Management	What's New in ArcGIS 8.3

RED CARPET COUNTRY

Session I 8:30am - 9:45am	Session II 10:15am - 11:30am	Session III 1:30pm - 2:45pm	Session IV 3:15pm - 4:30pm
ArcPad - Mobilizing Your Data	ArcGIS Extension Overview	ArcPad - Mobilizing Your Data	ArcGIS Extension Overview

GREEN COUNTRY

Session I 8:30am - 9:45am	Session II 10:15am - 11:30am	Session III 1:30pm - 2:45pm	Session IV 3:15pm - 4:30pm
ESRI Doctor's Office	ESRI Doctor's Office	ESRI Doctor's Office	ESRI Doctor's Office

Session I 11:00am to 12:30pm Frontier Country Room

Developing a Successful Interactive GIS in Record Time on a Pittance

Marina Sukup, AICP

Hua Lu, GIS Analyst

City of Allen

Abstract: The City of Allen has progressed from having NO maps to a successful community interactive GIS in less than three years, with only a modest outlay of capital. Practical (if light-hearted) tips on organizing a successful project: what management wants and how to get it done.

Biographies:

Marina Sukup, AICP, is currently the Director of Planning & Development for the City of Allen, Texas. Prior to her 3½ years with the City of Allen, she served as the Trinity River Corridor Project Planner for the City of Dallas, the Director of Planning & Development for the City of Laredo, Texas, the Assistant Director of Planning for the City of Houston, Texas, and the City Administrator for the City of Sugar Land, Texas. Ms. Sukup has also served as the Circuit-rider City Manager, Siouxland Interstate Planning Council, Sioux City, Iowa, and spent two years in private law practice. She received her B.A. degree in Latin American Studies from the University of Nebraska, a Master of Public Administration in Public Finance from the University of South Dakota, a Juris Doctor from South Texas College of Law, and a GIS Certificate from the University of Texas at Dallas. Ms. Sukup is a member of the American Institute of Certified Planners, the American Planning Association (APA), the Texas APA, the Texas Floodplain Administrators, the City Planners Association of Texas and the Texas Bar Association (inactive).

Hua Lu is a GIS Analyst for the City of Allen. She received her M.S. in Geographic Information Science from University of Texas at Dallas, and she has had a B.S. in Electrical Engineering from Hunan University. Also she is a Sun™ certified programmer for Java™ 2 platform. Ms. Lu has more than six years experiences on database developer, programmer and IT support.

Dallas Central Appraisal District's New Multi-purpose GIS Web Site

Duane Guidry, Director of Sales & Marketing

ATS, Inc.

Abstract: This presentation will discuss and illustrate how the Dallas Central Appraisal District (DCAD), the second largest appraisal district in Texas, recently implemented a multi-purpose public Web. The Web site utilizes ArcIMS technology and will be available to both internal and external customers. The multi-purpose Web site will provide detailed property information to citizens and DCAD's taxing entities. The Web site will also address various needs of DCAD's Customer Service Department. Users will be able to quickly and intuitively search and display property information, view current, certified and historical appraisal data, view property improvement photos and house sketches, search and view intelligent property maps with geo-referenced ortho-photography and more. The presentation will discuss the Web project. However, the majority of the presentation will include a live demonstration of DCAD's new multi-purpose GIS Web site.

Biography:

Name: Duane Guidry

Company: Applied Technological Services, Inc.

Title: Director Sales and Marketing

Education: Master of Business Administration Degree from Baylor University; Bachelors of Science Degree in Computer Information Systems from DeVry University

Background: Involved in the computer-aided design, engineering and automated mapping / GIS markets for the past 18 years and is the Director of Sales and Marketing at ATS, Inc. ATS provides services to assist clients with the design, construction, implementation, deployment and maintenance of a geographical information system (GIS).

Session I 11:00am to 12:30pm Great Plains Country Room

An Algorithm (Avenue Script) for Population-Area Modeling in ArcView

Gregory Plumb, East Central University

Department of Cartography and Geography

Abstract: Often required in regional site analysis is the determination of the area respective to a given population from a location. This presentation will demonstrate in detail how this can be achieved in ArcView using a computer algorithm depicted as an Avenue script. Included for the audience is the actual program code written by the author.

Two layers of source data are required to implement the population distance model. One layer is a point coverage (or shape file) representing the place or places of interest. The other layer is point data consisting of census blocks. A population value is also selected by the user, i.e., ***x***, the population whose respective areas will be computed.

The algorithm begins by buffering each place of interest an arbitrary distance. This results in a circle centered around each point, each possessing the same radius. Starting with one circle, the census blocks contained within it are selected, then their populations summed. If the sum is greater than a population of ***x***, then the circle size is decreased; circle size is increased if the sum is less than ***x***. Tabulation of population and adjustment of circle size are repeated until a population of ***x*** is achieved (plus or minus an acceptable range). Sizes of each remaining circles are altered in this manner, resulting in a population-area map. The implementation of this algorithm is shown using church locations representing the Texas Conference of Seventh-day Adventists. The results were subsequently used with additional spatial analyses to determine where to establish new churches.

Biography: Dr. Greg Plumb is an Associate Professor and Chair of the Department of Cartography and Geography at East Central University, located in Ada, Oklahoma. Greg has many years of experience in academic and production cartography and GIS. Prior to moving back to Oklahoma four years ago, he was GIS Coordinator for the City of Johnson City, Tennessee and taught at East Tennessee State University. Greg appreciates the hard work put into this conference, as he once organized and hosted an annual meeting of SERUG, SCAUG's neighbor to the east. Besides being a professor, Greg is sole-proprietor of Personalized Map Company, which specializes in custom thematic mapping.

Field Automation & Workflow

Robert C. Maggio, Ph.D., Manager of GIS Operations

Petris Technology

Abstract:

Biography: Dr. Maggio is responsible for GIS Business Development and assisting Petris clients in the planning, design, and geocoding of data sets for transfer into a geospatial database. He has over 23 years of experience working with geographic information systems (GIS). Dr. Maggio's specializations include the design, implementation and operation of GIS and the interface of remotely sensed data to those systems. Prior to joining Petris, Dr. Maggio was a professor and director of the Mapping Sciences Laboratory at Texas A&M University. This facility is one of the largest of its kind in the country. Dr. Maggio will lead Petris' development of an expanded GIS practice area, direct sales of GIS services to federal, state, and local governments as well as the marketing and sales support of GIS across all of Petris' product lines and customers. This expansion will build on the experience and technology of the SkyVision product line. SkyVision provides companies with unique imagery solutions that can be used to build GIS databases. Dr. Maggio has been published in over 50 industry journals and has traveled extensively working with international organizations. This work centered on the design and implementation of GIS-based systems for the monitoring and inventory of natural and man-made resources. In the past Dr. Maggio has worked on several high-level GIS related contracts. He developed a geographic information system to predict seasonal movement and economic impact of the Africanized Honey Bee, integrated a GIS and oil response simulator for the coast of Egypt, and developed a GIS database approach for integrating U.S. Forest Service Survey Data to monitor vegetation change using remote sensing. Dr. Maggio has worked extensively with the U.S. Army Corps of Engineers developing GIS capabilities at the Galveston, Ft. Worth, Tulsa, New Orleans, and Vicksburg Districts. His works centers on the integration of existing data sets as well as the development of Conceptual and Implementation Plans. In addition to his 20 years of classroom teaching, he has taught GIS, Remote Sensing, and Global Positioning workshops and

training sessions to hundreds of companies, government agencies and students, both locally and internationally. He has Bachelor of Science and Master of Science degrees from Mississippi State University and a Doctor of Philosophy in Remote Sensing from Texas A&M University.

Professional Affiliations include the American Society for Photogrammetry & Remote Sensing as well as the Society of American Foresters.

Session I 11:00am to 12:30pm Green Country Room

Developing a Successful Internet Mapping Initiative Using ArcIMS

Steven Myhill-Jones, President & CEO

Latitude Geographics Group Ltd.

Abstract: Latitude Geographics has helped develop and deploy Internet mapping initiatives for a variety of organizations across North America, including advanced features such as polygon editing, saved projects, and 3D visualization. An experienced speaker, Myhill-Jones has presented Internet mapping in various forms to audiences ranging from technical developers to HRH Prince Charles. Myhill-Jones' discussion will combine practical big picture advice with specific technical insight to ensure your Internet mapping initiative is successful. His presentation is designed to be accessible to non-technical individuals while remaining informative and insightful to more advanced developers. This presentation will be well worth attending if you have an interest in Internet mapping, regardless of your level of technical expertise or the status of your IMS development.

Biography: Steven Myhill-Jones is President & CEO of Latitude Geographics Group Ltd., an Internet Geography firm located in Victoria, BC, Canada. Myhill-Jones spearheaded the development of Geocortex Internet Mapping, which is the company's strategy for communicating geographic information over the Internet. As a provider of ArcIMS related development, hosting and extension software, Latitude Geographics has emerged as a leader in the field of Internet geography.

Session I 11:00am to 12:30pm Red Country Room

Implementing a City-wide Geodatabase for the City of Killeen, Texas

Kathy H. Spivey, Vice President

IT Nexus, Inc.

Abstract: In July of 2002 IT Nexus completed a City-wide Geodatabase design for the City of Killeen, Texas. This presentation demonstrates and discusses the steps used to build the City's enterprise Geodatabase. It illustrates the importance of understanding user needs by conducting departmental workshops. Methods used to build the Geodatabase using UML and CASE tools will be presented with a discussion on lessons learned for creating a geodatabase using these tools. The audience will learn the process for design, building and testing a geodatabase. A web-enabled data dictionary developed for the City's geodatabase will be presented.

Biography: Ms. Spivey's technical focus is on GIS database design and implementation; database migration strategies; and integration of GIS with existing or new external information systems.

Session II 2:00pm to 3:00pm Frontier Country Room

Distributed Hydrologic Model Using GIS

Baxter E. Vieux, PhD, PE

Vieux & Associates, Inc., Principal and Senior Scientist

University of Oklahoma, Professor of Civil Engineering and Environmental Science

Abstract: Hydrologic models that can utilize the information content of global digital datasets offer opportunities for improved simulation of surface runoff processes. Techniques must be developed to take advantage of high-resolution data from newly deployed remote sensing platforms. When simulating hydrologic processes using these digital

datasets with GIS, issues in spatial and temporal characteristics of radar rainfall (NEXRAD), topography, soils, and land use/cover must be addressed. This presentation will identify and discuss the major issues in the use of GIS data in distributed hydrologic modeling. V*flo*™, a commercial distributed hydrologic model developed by Vieux & Associates will be demonstrated. ArcView3.x orArcGIS 8.x used for development of GIS parameter maps.

Biography: Baxter E. Vieux, Ph.D., P.E. is a Full Professor in the School of Civil Engineering and Environmental Science, University of Oklahoma, Norman where he teaches courses in hydrology, geoinformatics (surveying), water quality management, engineering graphics and design. Before joining OU in 1990, he held a visiting professorship at Michigan State University teaching watershed management. Dr. Vieux was recently appointed as Adjunct Professor with the Department of Environmental Engineering and Science, Rice University, Houston. Prior to his academic career, he spent ten years with the USDA Natural Resources Conservation Service (formerly SCS) with his highest position as acting State Engineer supervising state-wide engineering design and construction programs in Michigan. He is a registered professional engineer in three states and is principal and founder of Vieux & Associates, Inc., an engineering technology company with clients in the US and internationally in radar rainfall, GIS, and hydrology. Recently he lead developed of the first commercially available physics-based distributed hydrologic model, Vflo™, which uses for real-time radar inputs for hydrologic analysis and prediction.

Externally sponsored research has been funded by NASA, EPA, NWS, NOAA, Army Corps of Engineers, NSF, and state/local agencies. Internationally, he has conducted research and worked on projects in France, Japan, Poland, Niger, Nicaragua, and Romania. He has authored over 70 publications in hydrology including a recent book, Distributed Hydrologic Modeling Using GIS, Kluwer Academic Press, Vol. 38. Two chapters involving radar and GIS appear in the widely-used engineering hydrology text book by Bedient and Huber, Hydrology and FloodplainAnalysis, 3rd edition, Prentice Hall.

Session II 2:00pm to 3:00pm Great Plains Country Room

Simplifying the Land Development Process for Local Government with ArcIMS

Robert L. Streeter Jr., SystemsAnalyst

IT Nexus, Inc.

Abstract: An ArcIMS application, the Available Real Estate Tracking Application, was developed for the City of Grapevine, Texas Development Services Department to simplify the process of distributing and managing information for real estate development. A customized query wizard assists users in identifying available property that matches a developer's size, location, and potential land use requirements. An Intranet version of the application has the added functionality of enabling the Department staff to manage the property information stored in a Microsoft Access database. Using customized map tools staff can click a map feature to add, update, or remove property information in the database.

Biography: Mr. Streeter's GIS focus has been on programming and includes developing a wide number of ArcIMS applications for local governments.

An Integrative Approach to Simulating Prescribed Fire in Northern Arizona

Tanya Hardison, Graduate Student

University of North Texas

Abstract: Simulation of fire requires an extensive amount of data and can be accomplished best using GIS applications. This paper demonstrates the integrative procedure of using of ArcGIS, ERDAS Imagine, GPS, and FARSITE to predict prescribed fire behavior on the Kaibab-Paiute reservation, a distinctive landscape of sagebrush grasslands and juniper-topped mesas. ArcGIS was used to create a database incorporating all variables into a common spatial reference system and format for the FARSITE model. ArcGIS SpatialAnalyst was then used to select optimal burn sites for simulation. Our predictions will be implemented in future interagency efforts towards vegetative restoration on the reservation.

Biography: Tanya Hardison is at the end of completing two Masters of Science degrees from the University of North Texas, one in Geography (May 2003) and the other in Biology specializing in Ecology (August 2003). She currently teaches Computer Cartography and Environmental Science at UNT. Tanya currently has a Bachelors

Degree in Geography from UNT. However, before returning for graduate education, she had the pleasure of working for the City of Denton, TX as a GIS Tech III and at Metapath Software (MSI) as a GIS and Remote Sensing Analyst.

Session II 2:00pm to 3:00pm Green Country Room

Orthophotho Magic

Kurt Menking, GIS Manager

Bexar Appraisal District

Abstract: History of Bexar Appraisal District and City of San Antonio orthophoto project. How we got there, what we got, and now what do we do with it. How we're making our old GIS data fit the new more accurate Ortho's. Trials, tribulations, then some ooh's and aah's. (you know the stuff that's cool but has no practical value)

Biography: Kurt Menking, has worked the last 12 years for Bexar Appraisal District as the Geographic Information Systems (GIS) Manager. Also worked five years for Ferguson Map Company (now part of ASI), and 9 years for Petroleum Information in their GIS departments. Has worked over 26 years in GIS. Graduate of Southwest Texas State University.

Session II 2:00pm to 3:00pm Red Carpet Country Room

A Spatial Analysis of Illegal Dumping in San Antonio, Texas

Stephen C. Brown, Ph.D. & Vincent A. Romeo, M.S.

The University of Texas at San Antonio

Department of Earth and Environmental Sciences

Abstract: Like most large cities, San Antonio, Texas suffers from a proliferation of illegal dumping. During the summer of 2002, nearly 200 illegal dumpsites in the 78249 zip code were mapped using GPS and their contents and volume documented. Participants in this session will get to explore the spatial and social factors that likely influence the locations of these dumpsites.

Biography: Steve Brown is an assistant professor of environmental science specializing in developing environmental applications for GIS and GPS.

Session III 3:30pm to 4:30pm Frontier Country Room

I've Got Data & Software Now What Do I Do?: A Case Study in Wastewater Management

Joyce Green, GIS Manager

Larry Knapp, GIS Analyst II

Michelle Matthews, GIS Utilities Analyst

City of Norman, GIS Services Division

Abstract: The City of Norman initiated a GIS Program in the early 1990's. By the late 1990's, layers in the geographic database included parcels, zoning, a comprehensive land use plan, orthoimagery, and the wastewater collection system. In 1997, the city's Utilities Department began work upon a Wastewater Master Plan. A portion of that plan relied upon GIS data and hydraulic modeling to assess the city's current sewer capacity and the impact that growth would have upon the wastewater collection system in the future. This presentation will focus upon the data and software required to complete the analysis, the political impact of the study and the influence that GIS had upon the outcome of the process, and the ongoing changes in the structure of both the GIS Services Division and the Utilities Department required to provide continuous monitoring of the impacts of growth upon the City's wastewater collection infrastructure.

Biographies:

Joyce Green has managed the City of Norman's GIS program since 1994. Prior to coming to the City of Norman, she

worked for the South Carolina Budget and Control Board as a GIS Analyst. She holds a Master of Science in geography from the University of South Carolina and Bachelor of Science in geography from Oklahoma State University.

Larry Knapp has worked as a GIS Analyst for the City of Norman since 1995. Prior to joining the City of Norman's GIS program, he managed the mapping section of the Cleveland County Assessor's Office. Larry has had the primary responsibility for converting the City's utility information into a GIS database.

Michelle Matthews joined the City of Norman's GIS Services Division in November of 2002 as a GIS Utilities Analyst. Previously she has worked in the GIS sections of Association of Central Oklahoma Council of Governments, and Geo Information Systems. She graduated from the University of Oklahoma in 1998 with a Bachelor of Art in geography and is currently pursuing a Master of Art in geography at OU.

Session III 3:30pm to 4:30pm Great Plains Country Room

Getting the Data Out There Using ArcIMS As A GIS Deployment Tool

Laura Carr, Senior Systems Analyst

IT Nexus, Inc.

Abstract: City governments implement GIS in an effort to assist employees in their daily work routines. While this may seem like an easy and logical task, a city may hit difficulty when the time comes to deploy GIS to various departments. Often times, a large investment is made to create data, but viewing and editing tools such as ArcInfo and ArcView are not purchased until later phases of development. In the end, the city does not have the software, personnel, or budget to distribute GIS data to employees that would assist them in their work functions.

A possible solution to this deployment issue is the use of Internet based software such as ArcIMS. While this implementation is generally viewed as latter stage software, ArcIMS can be useful for distributing GIS data and applications at the beginning stages of GIS development with little expense and training.

This presentation discusses the advantages of using ArcIMS as an early deployment tool of GIS data, but also covers some of the disadvantages such as maintaining the ArcIMS software. Two city government entities that have deployed ArcIMS applications in the initial and latter stages of GIS development were interviewed and their opinions are also presented.

Biography: Laura Carr is the Senior Systems Analyst for IT Nexus, Inc., a firm specializing in enterprise GIS planning, design, and implementation. Ms. Carr graduated from Texas A&M University in 1997 with a degree in Geology. She discovered GIS in her senior year at A&M and has worked in that field ever since. Ms. Carr has done a wide variety of projects with GIS and ESRI software starting with the basics digitizing and data creation which she did for both the City of College Station and the City of Denton. In her time at the City of Denton, Laura taught herself how to program in AML, Avenue, and Visual Basic. She brought this knowledge with her to Sprint PCS where her main objective was to build a digital map and database of the Sprint PCS wireless towers in the North Texas, Arkansas, and Oklahoma Regions. Working for Sprint PCS also introduced Laura to using MapInfo as a GIS software tool. She began with IT Nexus in the fall of 2000. In this position Laura has been able to broaden her GIS experience by working as a consultant. She performs tasks such as data QA/QC, programming in the ArcGIS environment, creating ArcIMS applications, and managing GIS projects. Her goals for the future are to broaden her project management skills and learn more on how to develop, model, and implement the geodatabase.

Session III 3:30pm to 4:30pm Green Country Room

Leveraging ESRI technology for GeoBusiness Solutions

Sharon Davis Rogan, Director of GIS Solutions

Tobin International, Ltd.

Abstract: A Geo-Business information solution combines complicated and incompatible geographic and business information technologies and makes them accessible across the entire enterprise. The solution brings together and simplifies the functions of data integration, management, administration, visualization, analysis and decision support.

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ESRI technology provides tools to support scalable solutions from an open architecture. Presentation includes discussions of case studies, technology components and demonstrations of a solution.

Biography: Sharon Davis Rogan is currently the Director of GIS Solutions and is the product manager for Tobin's GIS solutions including software, services and data. She has been with Tobin for 5 years and has over 20 years of industry experience providing spatial application and database solutions primarily for the petroleum industry.

Session III 3:30pm to 4:30pm Red Carpet Country Room

The GIS Academy A High School /Community College Transition

Barry Hanke, GIS Academy Instructor

Fort Bend Independent School District

Dean E. Ayres & Kenneth L. Russell, Houston Community College

Department of Geology and Geographic Information Science

Abstract: The vision of having a school that offered a GIS Academy started out as several residents complaining to the Fort Bend Independent School District board of education that the District did not offer enough training to prepare students for future careers. As a result the Vocational Director conducted a survey to Missouri City residents to ask which of many career areas they were interested in adding. As a result GIS was added. With the help of Department of Geology and Geographic Information Science, Houston Community College, Stafford Campus, a curriculum committee, which included, public and private sectors the curriculum was crated and developed. The articulation agreement with Houston Community College and Texas A&M Corpus Christi students from Fort Bend ISD Can receive up to 18 college credit hours.

Biography: Barry Hanke moved from Saskatchewan in Canada in 1996 and settled in Houston Texas.

Master Machinist

Bachelor of Vocational Education

Texas Vocational Teaching Certification

AutoCAD 2000 Certification

Complete an Associate Degree in GIS from Houston Community College in the Spring of 2004

PRESENTATION ABSTRACTS

Undergraduate Competition

Workplace GIS Project between Tyler Junior College GIS Technology Department and Texas Parks & Wildlife Department

John B. White

Tyler Junior College

The purpose of this project is to create a set of three maps for a Wildlife Management Area for the Texas Parks & Wildlife Department. The maps will be used by the public for navigating the management areas. They will consist of a public use map, a topographic map, and an aerial photo map.

The data for this project was provided by the Texas Parks & Wildlife Department and consisted of DOQ photos, topographic maps, and a digitized boundary of the management area; all of which is stored on CD. My task is to use the data provided to create three public use maps. First I had to match the boundary data with the topographic map data to provide a map for users that shows the terrain of the management area. Next I had to match the boundary data with the photo image to provide the users with a map that shows the vegetation coverage of the management area. Finally I created a general map using the boundary data and data I digitized from the DOQ photo. The final map shows roads, trails, registration stations, creeks, lakes, and rivers. The purpose of these maps is to provide as much information about the management area as possible to the public user. These maps will be included in hunting guides as well as being accessible from the Texas Parks & Wildlife website www.tpwd.state.tx.us.

This project was created using ESRI ArcView 3.1 software and was compiled by John B. White, student of Tyler Junior College in the GIS Program under the instruction of Daphne R. Morton.

Using GPS and GIS to Map Storm Inlet Drains

Kelby Thomasson

Department of Cartography and Geography

East Central University

Maintaining an adequate storm drainage system is one of the challenges many municipalities face today. One of the key elements of this system is its storm inlet drains, as they serve as the entrance for water runoff into the underground water pipe network. This poster presentation illustrates how a global positioning system (GPS) integrated with a geographic information system (GIS) was used to map the inlets and their characteristics for the City of Ardmore, Oklahoma.

The project started with inputting the attribute data, such as grate ids, inlet ids, drain condition, direction of flow, and width, length and diameter of the inlets. City workers previously collected this data in a hard copy format. Typing this information into a database was time intensive.

Aerial photography was used to roughly locate the inlet drains. Street intersections were also utilized to estimate the locations of known drains that were not visible on the aerial photos.After digitizing this point information for the inlets, they needed to be field-truthed. As each drain was located, its real-world coordinate value was determined more precisely using GPS technology, whereby a hand-held device ascertains ground coordinates from data received from a set of navigation satellites. A laptop computer was used in the field to adjust the previously mapped drains to the more precise locations. More than 200 additional drains were also found that were not previously recorded.

Upon completion of the fieldwork, a map was designed to show the drain locations with the street network and other municipal features. This information will be subsequently used by city engineers with flood data and hydrology data for analysis and evaluation of the city's storm drainage system.

Clean Energy from the Wind An Analysis for the City of Denton, Texas

Dennis Little Jr.

Undergraduate, University of North Texas

Texas is one of the five windiest states in America. For this reason, wind energy could be the future energy source for large parts of North Texas. The City of Denton and Denton County could benefit from the production of clean, cheap energy through wind generation produced locally. This study identifies areas of Denton County that are considered to be optimal locations to site wind generation equipment. The analyses for this project include spatial decision analysis, using GIS, and cost benefit and cost recovery analysis, using standard mathematical means. The product is a map showing the best possible site for a "Wind Park" and figures demonstrating cost feasibility.

Graduate Competition

Gis Decision Support System For Prevention Of Ballast Water-borne Species Introductions

Samuel Amoako-Atta

TexasA&M at Corpus Christi

Ballast water discharges are now known to be the single largest source of introduction of invasive marine species into new environments. As evidenced by the recent introductions of the Brown mussel, *Perna perna*, in 1990, and the Asian Green mussel, *Perna viridis*, in 1999, the Gulf of Mexico, and more specifically, the Coastal Bend, is not impervious to ballast water-borne species introductions. The total economic impact of invasive species on the U.S. economy is estimated at $123 billion annually. The impacts of such introductions into our ports cannot be over emphasized. Unlike other forms of pollution such as oil spills, where ameliorative remedies allow eventual environmental recovery, successful introductions are irreversible and once introduced nuisance species can cause major ecological and economic impacts in receiving environments.

Appropriate assembly of related data (ocean environmental data and aquatic invasive species) would enable informed maritime management practices to be implemented. This will form the cornerstone for effective prevention of aquatic nuisance species. Integrated assessment tools such as Geographic Information Systems (GIS) provides an effective platform for designing a database for assessing the risk, developing risk reduction strategies and preparing (e.g. predicting impact and budgeting for control) for the possibility of introduction.

This research thus provides a model for the development of ballast water management policies specific to the Port of Corpus Christi. It also provides a platform for the assessment of the potential of reciprocal transfers from Corpus Christi Bay waters to the waters of the trade partners, which could serve as a model for other US ports.

Spatial pattern analysis using ArcGIS and ArcObjects

Capton Siluvairajan

University of Texas at Dallas

One of the prime objectives of applying spatial statistics is to detect spatial patterns, which lead us to understand geographic changes. Spatial patterns are classified into three types. Clustered, random and dispersed. In classifying these patterns we can generate spatial autocorrelations among neighboring area units like polygons. In this project, polygon shapefiles are taken as input and matrixes containing spatial proximity information among the polygons are created. ArcObjects (VBA) in theArcGIS desktop environment is used for the purpose.

Use Of Gis Technology To Assess Mosquito Populations And West Nile Virus Activity In Denton County, Texas

Bethany Bolling
University of North Texas

The arrival of West Nile virus to North America in 1999 created an urgent need for new approaches to mosquito surveillance and control efforts in the United States. Geographical information system (GIS) technology is increasingly being used to address epidemiologic issues related to insect-borne disease systems. A population survey was conducted on mosquito species occurring on the Ray Roberts Greenbelt, a riparian corridor used for public recreation, located on the Elm Fork of the Trinity River, in Denton County, Texas. ArcGIS software was used to set up a stratified random sampling design based on habitat parameters. Multivariate analyses of sampling data and climatic variables were incorporated into Modelbuilder, a spatial modeling program, to create a risk assessment model for West Nile virus.

Ancient Highways: Gis As An Analytical Tool For Identifying Potential Archaeological Sites

Marikka Williams
Graduate Student, University of North Texas

Archaeologically, site catchment and least cost pathway analysis can provide valuable information on ancient survival strategies and social organization. From a cultural resource management perspective developing models of prehistoric site selection, settlement patterns, and mobility can improve analysis methodology. Digital access to archaeological data allows the incorporation of cultural resource information into the overall planning and interpretive process. GIS provides a means to integrate environmental and archaeological information into an effective tool. ArcGIS technology can be used to create archaeological resource maps that can facilitate cultural resource management planning, mitigation, preservation, excavation, analysis and interpretation. This GIS project establishes site-catchment areas and identifies environmental variables within those areas. Sites are then statistically evaluated to determine if the distribution of arrowhead type is due to chance or related to specific environmental variables. A map will be created to provide insight into these variables that contributed to prehistoric site selection. Based on these results, least cost pathways are constructed to establish "archaeological sensitive areas". The end product is a map that will display these ancient highways that are likely to contain archaeological remains.

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