

Curriculum Vitae  
**Michael E. Houts**

**PERSONAL:**

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Lawrence, Kansas 66046  
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Citizenship: United States  
Social security #: available on request  
Veterans preference: none  
Updated: April, 2014

**CAREER OBJECTIVE:**

A position developing and applying GIS and remote sensing projects designed to better understand and manage natural resources. Job duties would include processing and analysis of vector and raster data sets as appropriate for the specific project.

**PROFESSIONAL EXPERIENCE:**

**Natural Resource GIS/Remote Sensing Specialist:** July 2001 - present.

Kansas Applied Remote Sensing (KARS)/Kansas Department of Wildlife and Parks (KDWP)  
Dr. Edward Martinko, Director KARS. 2101 Constant Avenue, Lawrence, KS 66044  
phone: (785)864-7720, email: martinko@ku.edu

Serve as the GIS specialist to the Kansas Department of Wildlife, Parks, and Tourism (KDWP) where I provide technical expertise in the areas of GIS and remote sensing to KDWP objectives. Functioned as Project Manager (since 2002), with duties including grant/budget creation, acquisition of data, development of data bases, conducting research and analysis of landscape variables, provide GIS technical assistance, and the creation/presentation of maps, tables, and reports. Oversaw and trained student interns and directed Web GIS personnel on project objectives and timelines.

Research Assistant: August 2000 - July 2001.

Kansas Applied Remote Sensing (KARS) Program (a division of Kansas Biological Survey),  
Edward A. Martinko, Director. 21201 Constant Avenue, Lawrence, KS 66044

Graduate Research Assistant: June 1997 - August 2000.

KARS Program, Edward .A. Martinko, Director. 21201 Constant Avenue, Lawrence, KS 66044

**SUMMARY OF QUALIFICATIONS:**

- Highly skilled in the use of GIS and remote sensing technologies (over ten years experience).
- Experience designing and developing natural resource GIS database applications.
- Thorough understanding of ecological principles and field sampling techniques.
- Excellent ability to collect, process, analyze, and communicate geospatial data.
- Committed to solving challenges to produce the best results possible.
- Strong interpersonal and collaboration skills with ability to create win-win scenarios.

**EDUCATION:**

**M.A. in Geography**, 2000. Emphasis in remote sensing and GIS techniques and applications  
University of Kansas, Lawrence, KS, 66045

*Masters Thesis:* Modeling gray wolf habitat in the Northern Rocky Mountains using GIS and logistic regression. [http://kars.ku.edu/media/uploads/work/Houts\\_thesis.pdf](http://kars.ku.edu/media/uploads/work/Houts_thesis.pdf)

**B.G.S. in Environmental Studies**, 1997. Emphasis in ecology and remote sensing.  
University of Kansas, Lawrence, KS, 66045

Relevant Course Work:

Biology	Conservation/Wildlife Biology	Geographic Statistics
Population Biology	Comparative Animal Behavior	Multivariate Statistics
Ecology	Environmental Conservation	GIS I, II
Field Ecology	Environmental Ethics	Environmental GIS
Diversity of Life	Environmental Policy	Remote Sensing I, II
Plant Geography	Ecosystem Management	Field Remote Sensing

High School: Diploma in 1992 from Shawnee Mission East, Prairie Village, Kansas.

**PROFESSIONAL ACCOMPLISHMENTS:**

Recent projects include:

- Developed the online Natural Resource Planner, an ArcServer application that incorporates over a dozen data layers (land cover, sensitive species...) to help provide resource managers and developers information so they can make informed decisions about project siting and potential impacts to the environment.
- Southern Great Plains Crucial Habitat Assessment Tool (SGP CHAT). The online mapping tool created in phase I of the Western Governors Association Project to identify Crucial Habitat. The online tool displays the data generated in a 5-state cooperative effort to map crucial habitat areas for the lesser prairie chicken throughout its historical range. <http://www.kars.ku.edu/maps/sgpchat/>
- Updated shoreline boundaries for reservoirs and state fishing lakes, then created sampling grids over each water body to help with fisheries sampling procedures.
- Managed GIS database of prairie dog colonies in Kansas to provide state personnel with location of colony complexes and colony density maps.
- Updated range distribution map for greater and lesser prairie chickens in Kansas.

Served as Kansas state GIS representative and played an integral role in the Western Governors Associations’ Wildlife Council project to create a west-wide (17 states) set of statewide datasets that reflect variables important for states to manage for the conservation of natural resources. Work product from the workgroups will be combined to calculate a Crucial Habitat Index that will be released in 2013 via a new West-wide regional map service.

- Member of the Landscape Integrity and Connectivity workgroup
- Member of the Regional viewer workgroup
- Member of the Species of Greatest Conservation Need workgroup

Central GIS analyst for the Lesser Prairie Chicken Interstate Working Group. Worked to provide members with data to create range-wide LEPC management plan. Assimilated, processed, and analyzed numerous datasets that covered the 5 state region that were used to model habitat, assess landscape threats, and inform the management plan. Efforts culminated in a revised version of the SGP CHAT web service (summer 2013).

Perform advanced processing using ERDAS Imagine, ArcINFO/ArcGIS, and ArcView software. Duties include complex geo-processing and analysis, ArcGIS model creation, digitizing, and map production.

Successfully revised the Critical Habitat data layer to create a new Potentially Suitable Habitat for State Listed Species GIS layer for KDWPT that reflects areas of important habitat for threatened or endangered species and those of greatest conservation need. Original data was very outdated and updated version was needed for both conservation planning and the review/approval of major development projects.

Successfully merged multiple GIS data layers and used logistic regression to model wolf habitat suitability to predict where future packs may disperse to. Model was re-evaluated two years later and showed good agreement between predicted and new wolf locations.

Performed exploratory research using high spatial and temporal resolution digital imagery to identify the optimal date(s) for separating corn and soybean crops in Iowa.

Responsible for the creation and management of an innovative vegetation database using 10 years of bi-weekly AVHRR satellite imagery covering the conterminous United States as part of NASA's Great Plains Regional Applications Center.

#### **PRESENTATIONS:**

Michael Houts, Jason Luginbill. Mapping and Assessing Crucial Aquatic Habitats in Kansas. Governor's Annual Conference on the Future of Water in Kansas. October 24-25, 2013

Michael Houts, David Bender, Jason Luginbill Mapping Crucial Habitat in Kansas – Part of an effort to create a consistent map of crucial habitat across the western United States. Kansas Natural Resource Conference. January 30-31, 2014.

Michael Houts. Development and Applications of the Kansas Topographic Wetland Identification Process. Governors Water conference. October 30, 2012. Manhattan KS.

Michael Houts. Making Kansas Aquatic Resource Data Available Through Online Mapping Services. Governors Water conference. October 30, 2012. Manhattan KS.

Deb Baker, Mike Houts, Frank Norman, Jeff Neel. Development of a Statewide Wetland Restoration and Prioritization Process for Kansas. Presentation to the KS GIS Policy Board. 2012

Michael Houts, John Pierce, Teal Wyckoff, Adam Messer, Dave Theobald, Pat Comer, Julie Mikolajczyk. Using ArcGIS Explorer to Conduct Remote Field Work for Analysis of Landscape Integrity Models Society for Conservation GIS conference. July 19-22, 2012. Monterey CA.

Michael Houts, Allen Janus. Assessing the Ability of Different Metrics to Identify Gradients in Landscape Integrity in the Southern Great Plains. Society for Conservation Biology, North American Congress for Conservation Biology July 15-18, 2012. Oakland CA.

Michael Houts, J. Neel, F. Norman, D. Baker, J. Kastens. A Methodology to Identify Existing & Potential Wetlands Areas in Kansas for Protection, Enhancement, and Restoration. Natural Resource Conference in Wichita KS, January 26<sup>th</sup> 2012

Houts, Michael, J. Neel. Developing a Methodology to Identify Existing and Potential Wetlands in Kansas. Watershed Restoration and Protection Strategy (WRAPS) Conference. April 26, 2011. Junction City, KS.

Houts, Michael. The Natural resource Planner: Using Internet GIS to Minimize the Potential Impacts of Development Projects on Wildlife and Sensitive Habitats. Biodiversity Without Boundaries, NatureServe Conservation and Natural Heritage Conference. May 8-12, 2011. Nebraska City, NE.

Houts, Michael. Using LiDAR to Identify Wetlands. Kansas GIS Policy Board. November 4, 2011. Topeka, KS.

Houts, Michael. Using Internet Mapping to Assist Natural Resource Planning. GIS Day at KU. November 16, 2011. Lawrence, KS.

Houts, Michael. Using Internet Mapping to Assist Natural Resource Planning. Kansas Association of Conservation Districts. November 20-22, 2011. Wichita KS.

Jennifer Delisle, M. Houts. Creation and Management of Natural Resource Geospatial Data to Assist in Planning and Conservation Efforts. Kansas Association of Conservation Districts, 66<sup>th</sup> Annual Convention. November 21-23, 2010. Wichita KS.

Houts, M.E., J. Neel, F. Norman, J. Bond, D. Baker, H. Klaege. Developing a standardized methodology to existing and potential wetlands in Kansas for protections, enhancement and restoration. Water and the Future of Kansas Conference. October 26, 2010. Poster

Houts, M.E., E.R. Johnson, M.K. Laubhan. Establishing Data Standards in a Web Mapping Application to Facilitate Informed Natural Resource Decisions. Association of American Geographers, Great Plains/Rocky Mountain Division. October 8-9, 2010, Lawrence KS.

Houts, M.E., E.R. Johnson. The Natural Resource Planner - A tool to help site development projects to minimize their impact on wildlife and sensitive habitats. North American Wildlife and Natural Resource Conference. Milwaukee, WI. March 22-27, 2010.

Houts, Michael, E. Johnson, C. Hise. Using GIS to assist with wind resource planning. Kansas Natural Resource Conference. Wichita KS. January 29-30, 2009. Poster

Houts, Michael E. Natural Resource Planner, an assessment and comment session. November 17, 2009. KS Biological Survey, Lawrence KS.

Houts, Michael E. (author and presenter) An introduction to the Kansas Natural Resource Planner. Kansas Wind & Wildlife Resources Conservation Collaborative Meeting. August 27, 2009. Great Plains Nature Center. Wichita KS.

Houts, Michael E. GIS and GPS Hands-on Workshop for Kansas Department of Wildlife and Parks Personnel. Hays, Kansas. August 4-5, 2009.

Houts, Michael E. GIS and GPS Hands-on Workshop for Kansas Department of Wildlife and Parks Personnel. Lawrence, Kansas. January 8, 2009.

Houts, Michael E. Mapping known and potential prairie chicken habitat in Kansas Meeting/conference. July 23<sup>rd</sup>, 2008. Salina KS.

Houts, Michael E. GIS and GPS/computer interface for Kansas Department of Wildlife and Parks Personnel. Kansas State Fish and Wildlife Division Meeting. Salina, Kansas. February 26-28, 2008.

Houts, Michael E. GIS and GPS Hands-on Workshop for Kansas Department of Wildlife and Parks Personnel. Lawrence, Kansas. March 22-23, 2007.

Houts, Michael E., J. deNoyelles, R.O. Sleezer, and D.P. Young. Water and the Future of Kansas Conference. "Using Multispectral Airborne Imagery to Inventory and Assess Rural Water Bodies". Lawrence, Kansas. March 11, 2004. Poster presentation.

Houts, Michael E., J. deNoyelles, Joseph Anderson. 10<sup>th</sup> Regional Wetlands and Water Resource Meeting. "Using Multispectral Airborne Imagery to Monitor and Map Riparian and Wetland Vegetation Characteristics". Kansas City, MO. March 9-10, 2004.

Houts, Michael E. World Wolf Congress 2003. "Using Logistic Regression To Model Wolf Habitat Suitability". Banff, Canada. September 25-28, 2003.

[http://kars.ku.edu/media/uploads/work/wolves\\_Houts03.pdf](http://kars.ku.edu/media/uploads/work/wolves_Houts03.pdf)

Houts, Michael E., K. Jan Oliver, Jim Von Loh, Kevin P. Price, Keith Sexton. Central Plains Aquatic Bioassessment and Biocriteria Symposium. "Using Aerial Photography and Satellite Imagery to Monitor Changes in Cheyenne Bottoms Wildlife Area". September 18-19, 2002. Oral presentation.

Houts, Michael E., Houts, M.E., Kevin P. Price, Roger D. Applegate. 2002. Using AVHRR Satellite Data to Model Pheasant Populations in Northwest Kansas. 17<sup>th</sup> Annual Symposium for the International Association of Landscape Ecology. Lincoln, Nebraska. April 23-27. Poster presentation.

Houts, Michael E., Kevin P. Price, Edward A. Martinko. Differences in Onset of Greenness: A Multitemporal Analysis of Grass and Wheat in Kansas. Third International Conference on Geospatial Information in Agriculture and Forestry. Denver, Colorado. November 5-7. Poster presentation.

Houts, Michael E., X. Guo, K.P. Price, J.L. Whistler, E.A. Martinko, D. DePardo. Developing a Multispectral Data Acquisition System for Capturing High-Resolution Airborne Digital Imagery. Kansas Academy of Sciences.

Xulin Guo, K.P. Price, M. E. Houts, E. A. Martinko. Developing the Methods for Mapping Land Use/Land Cover and Estimating Rates of Soil Carbon Sequestration Using High Resolution Hyperspectral and Digital Airborne Imagery. State EPSCoR meeting at capital building in Topeka, Kansas. Poster presentation.

Houts, Michael E., S.L. Egbert, D. Bennett, and K.P. Price. Using Multiple Mapping Units and Logistic Regression to Model Wolf Habitat in the Northern Rocky Mountains. Twelfth Annual North American Interagency Wolf Conference. Chico Hot Springs, Montana. April 11-13.

Houts, Michael E., R.Y. Lee, K.P. Price, E.A. Martinko. Using 10-Meter Digital Airborne Imagery to Classify Crop Types in Iowa. Second International Conference: Geospatial Information in Agriculture and Forestry. Lake Buena Vista, Florida January 10-12. Poster

Houts, Michael E., K.P. Price, E.A. Martinko, D.L. Kastens Monitoring Gray Wolf Populations in the Northern Rocky Mountains. Predicting Species Occurrence: Issues of Scale and Accuracy Conference. Snowbird, Utah. October 18-22. Poster presentation.

Houts, Michael E., K.P. Price, E.A. Martinko, D.L. Kastens. Monitoring Gray Wolf Populations in the Northern Rocky Mountains. American Society for Photogrammetry and Remote Sensing Annual Conference. Portland, Oregon. May 17-21. Poster presentation.

## **PROCEEDINGS:**

Houts, M.E., E.R. Johnson. The Natural Resource Planner - A tool to help site development projects to minimize their impact on wildlife and sensitive habitats. North American Wildlife and Natural Resource Conference. Milwaukee, WI. March 22-27, 2010.

Charles D.Lee, A. E. Warneke, M. Houts, T.R. Livingston, P.S. Gibson. 2006. Cougars in Kansas: Recolonization or Fiction. 20<sup>th</sup> Biennial North American Prairie Conference. University of Nebraska at Kearney. July 23-26, 2006.

Houts, Michael E., K. Jan Oliver, Jim Von Loh, Kevin P. Price, Keith Sexton. Central Plains Aquatic Bioassessment and Biocriteria Symposium. Using Aerial Photography and Satellite Imagery to Monitor Changes in Cheyenne Bottoms Wildlife Area. September 18-19, 2002. Lawrence KS.

Houts, M.E., K.P. Price, and R.D. Applegate. 2002. Using AVHRR Satellite Data to Model Pheasant Population Trends in Northwest Kansas. XXII FIG International Congress ACSM-ASPRS Conference and Technology Exhibition 2002 Congress/Conference Proceedings. April 19-26, Washington, DC 7 pp.

Houts, M.E., Kevin P. Price, Edward A. Martinko. 2001. Differences in Onset of Greenness: A Multitemporal Analysis of Grass and Wheat in Kansas. Third International Conference on Geospatial Information in Agriculture and Forestry. Denver, Colorado.

Moskal, L.M., M.E. Houts, M.E. Jakubauskas, K.P. Price, and E.A. Martinko. 2001. Multispectral high-resolution digital photography for forest characterization in the Central Plateau of the Yellowstone National Park. 3<sup>rd</sup> International Forestry and Agriculture Remote Sensing Conference and Exhibition, Denver, CO, November 2001.

Moskal, L.M., M.E. Houts, M.E. Jakubauskas, K.P. Price, and E.A. Martinko. 2002. Multispectral high-resolution digital photography for forest characterization in the Central Plateau of the Yellowstone National Park. Proceedings, 5<sup>th</sup> International Airborne Remote Sensing Conference and Exhibition, Miami, FL.

Whistler, Jerry, L., X.Guo, M.E. Houts, K.P. Price, E.A. Martinko, D. DePardo 2001. Developing a Multispectral Data Acquisition System for Capturing High-Resolution Airborne Digital Imagery. Proceedings of the 2001 American Society for Photogrammetry and Remote Sensing annual conference.

Houts, M.E., R.Y. Lee, K.P. Price, S.L. Egbert, E.A. Martinko. 2000. Using 10-Meter Digital Airborne Imagery to Classify Crop Types in Iowa. Proceedings of the Second International Conference: Geospatial Information in Agriculture and Forestry.

Houts, M.E., K.P. Price, E.A. Martinko, D.L. Kastens. 1999. Monitoring Gray Wolf Populations in the Northern Rocky Mountains. American Society for Photogrammetry and Remote Sensing Annual Conference.

## **PUBLICATIONS:**

Houts, Michael E. 2010-2011 Annual Report: A review of GIS Projects Completed as the GIS/Remote Sensing Specialist to the Kansas Department of Wildlife and Parks. Kansas Biological Survey Report Series, Number 170. Kansas Applied Remote Sensing Program. Lawrence KS.

Houts, Michael E. 2009-2010 Annual Report: A review of GIS Projects Completed as the GIS/Remote Sensing Specialist to the Kansas Department of Wildlife and Parks. Kansas Biological Survey Report Series, Number 162. Kansas Applied Remote Sensing Program. Lawrence KS.

Peek, M.S and M. Houts. 2009. Estimated number and area of prairie dog colonies in Kansas. Kansas Department of Wildlife and Parks, Pratt, KS

Peek, M.S and M. Houts. 2008. Evaluation of three surveys assessing prairie dog colonies in Northwest Kansas. Kansas Department of Wildlife and Parks, Pratt, KS

Houts, Michael E., R. Rodgers, R. Applegate, B. Busby. 2008. Using Local Knowledge and Remote Sensing to Map Known and Potential Prairie-Chicken Distribution in Kansas. *The Prairie Naturalist* 40(3/4): September/December. pp. 87-93.

Houts, Michael E. 2008-2009 Annual Report: A review of GIS Projects Completed as the GIS/Remote Sensing Specialist to the Kansas Department of Wildlife and Parks. Kansas Biological Survey Report Series, Number 153. Kansas Applied Remote Sensing Program. Lawrence KS.

Houts, Michael E. 2007-2008 Annual Report: A review of GIS Projects Completed as the GIS/Remote Sensing Specialist to the Kansas Department of Wildlife and Parks. Kansas Biological Survey Report Series, Number 148. Kansas Applied Remote Sensing Program. Lawrence KS.

Lee, C.D., A.E. Warneke, M. Houts, T.R. Livingston, and P.S. Gibson. 2006. Cougars in Kansas: recolonization or fiction? Proceedings of the North American Prairie Conference, University of Nebraska, Kearney, NE, July 2006.

Houts, Michael E. 2006-2007 Annual Report: A review of GIS Projects Completed as the GIS/Remote Sensing Specialist to the Kansas Department of Wildlife and Parks. Kansas Biological Survey Report Series, Number 140. Kansas Applied Remote Sensing Program. Lawrence KS.

Houts, Michael E. Using Multispectral Aerial Imagery to Map the Vegetation of Cheyenne Bottoms Wildlife Area. 2006. Kansas Biological Survey Report Series, Number 128. Kansas Applied Remote Sensing Program. Lawrence KS.

Houts, Michael E. 2002 Annual Report - Geographic Information System Database; Cheyenne Bottoms Wildlife Area, Kansas. Michael Houts. Report 111. KARS Program. Lawrence KS.

Whistler, J. L., M.E. Houts, E.A. Martinko, K.P. Price, J. Smith Kastens. 2002. *A Satellite View of Kansas*. Kansas Applied Remote Sensing Program, University of Kansas.

Houts, Michael E. 2001 Annual Report - Geographic Information System Database; Cheyenne Bottoms Wildlife Area, Kansas. K. Jan Oliver and Michael Houts. Technical Memorandum No. 8260-02-04. U.S. Bureau of Reclamation, Technical Service Center. Denver, CO

Houts, Michael E.. 2000. Masters Thesis: Modeling Gray Wolf Habitat in the Northern Rocky Mountains. University of Kansas.

#### **WORKSHOPS/SEMINARS:**

- ESRI ArcGIS 10.0 seminar. Oct 26, 2010. Kansas city
- Mid America GIS workshop - April 19, 2010. KCMO
- Mid America GIS workshop - April 22, 2010, KCMO
- ESRI ArcGIS 9.3 seminar. Oct 21, 2008. KCMO
- Timber stand improvement workshop, Kansas forest Service. Baldwin, KS. October 5, 2005.
- ArcGIS 9.1 Hands-on Workshop, ESRI. Lawrence, KS. August 10, 2005.
- Central Plains Aquatic Bioassessment and Biocriteria Symposium. Sept18-19, 2002. Lawrence
- FRAGSTATS: Analysis of Landscape Patterns: The Use and Interpretation of Landscape Metrics. Workshop. Lincoln, Nebraska. April 2002.
- New Opportunities in Earth Observation: MODIS and ASTER. Workshop. Lincoln, Nebraska. April 2002.
- ArcInfo 8.1 workshop. Topeka, Kansas. August, 2001.
- Stream Reference Conditions and Landscape-scale Bioassessment workshop. Lawrence, Kansas. April 2001.
- Stream Habitat Assessment workshop. Lawrence, Kansas. December 2000.

#### **COMPUTER and RELATED SKILLS:**

- Advanced experience using ERDAS Imagine for image processing
- Extensive experience using ARC/INFO, ArcGIS, and ArcView
- Experience creating models, batch scripts, and Aml's for Imagine, ARC/INFO
- Skilled with graphics software including Freehand, Photoshop, and Illustrator
- Experienced using Dreamweaver to create internet web pages.
- Proficient with office word processing and spreadsheet software packages
- Ability to analyze and summarize field and satellite data
- Able to plan, acquire, and interpret aerial photographs

#### **WEB PAGES:**

##### **[www.kars.ku.edu/maps/naturalresourceplanner](http://www.kars.ku.edu/maps/naturalresourceplanner)**

The NRP is an interactive ArcServer web page designed as an unbiased tool for use on site development projects so that Kansas can benefit from development of its resources while protecting sensitive wildlife and wildlife habitat. Data layers in the tool include wind power potential, proposed and current wind farms, oil/gas well density, infrastructure, land cover, sensitive species, managed/protected areas, and numerous others.

##### **[www.kars.ku.edu/maps/SGPCHAT](http://www.kars.ku.edu/maps/SGPCHAT)**

The Southern Great Plains Crucial Habitat Assessment Tool (SGP CHAT) is an interactive ArcServer web to provide information on the range, habitat, and management of the lesser prairie chicken (a species of concern in KS, CO, OK, TX and NM as well as a candidate species for listing under the USFWS ESA).

#### **REFERENCES:**

Available upon request.