

Curriculum Vitae  
**Michael E. Houts**

**PERSONAL:**

903 West 20th Terrace  
Lawrence, Kansas 66046  
mhouts@ku.edu  
785-864-1515

Citizenship: United States  
Social security #: available on request  
Veterans preference: none

**CAREER OBJECTIVE:**

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

**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. [www.kars.ku.edu/about/people/houts/pubs/wolves\\_Houts03.pdf](http://www.kars.ku.edu/about/people/houts/pubs/wolves_Houts03.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.

**SUMMARY OF QUALIFICATIONS:**

- Highly skilled in the use of GIS and remote sensing technologies (ten years).
- 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 geo-spatial data.
- Enthusiastic about and dedicated to ecological research, natural resource management.
- Good organization and communication skills

## **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. 21201 Constant Avenue, Lawrence, KS 66044  
phone: (785)864-7720, email: martinko@ku.edu

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

## **Principle responsibilities/accomplishments**

- Serve as the GIS specialist to the Kansas Department of Wildlife and Parks (KDWP) where I provide technical expertise in the areas of GIS and remote sensing to KDWP objectives. Duties include acquisition of data, development of databases, conduct research and analysis of landscape variables, provide GIS technical assistance, create maps, graphics, tables, and reports as well as other duties as requested. Recent projects include:
  - 1) Interpreted 1:12,000 scale NIR aerial photographs to map land cover communities in Cheyenne Bottoms Wetland.
  - 2) Integrated spreadsheet records of fishing license data with GIS data to analyze license to stocking and density for improved efficiency and public availability.
  - 3) Managed GIS database of prairie dog colonies in Kansas to provide state personnel with location of colony complexes and colony density maps.
  - 4) Updated range distribution map for greater and lesser prairie chickens in Kansas.
  - 5) Developing comprehensive index of all public water access points with GPS locations and descriptions of access conditions/facilities for public use.
- Perform advanced processing using ERDAS Imagine, ARC/INFO, and ArcView software. Duties include registration, rectification, reprojection, histogram manipulation, digitizing, map production, model and AML writing, and batch file creation.
- Responsible for planning, acquiring, and processing digital multispectral airborne imagery in support of a variety of research initiatives.
- 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.

## **FIELD EXPERIENCE:**

- Designed and conducted ground truth sampling to assist with interpretation and digitizing of vegetation communities using NIR aerial photograph of Cheyenne Bottoms
- Co-led four weeks of back-country vegetation sampling (biomass and LAI) in Grand Teton and Yellowstone National Parks as part of a NASA and EPA funded biodiversity study to identify differences in meadow types and assess the possibility of using remotely sensed data for classification and monitoring
- Collected weekly spectrometer data for corn, soybean and grasslands in Kansas for validation of ongoing vegetation phenology metrics research.
- Assisted with a study on the affects of grazing intensity and its impacts on ground cover: estimated percent cover, collected biomass, performed point transects, identified plants, and used spectroradiometer to measure reflectance.
- Collected field data regarding spectral reflectance, biomass, and percent cover variations for different grassland management practices (hayed, burned, untreated, native).

## **PUBLICATIONS:**

### **Proceedings:**

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.

**Proceedings (continued):**

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.

**Other publications:**

In review . Using Local Knowledge and Remote Sensing to Map Known and Potential Prairie-Chicken Distribution in Kansas. Michael E. Houts, Randy Rodgers, Roger Applegate, Bill Busby. Submitted to Prairie Naturalist.

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.

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

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.

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

## **Presentations:**

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

Houts, Michael, 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, 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. Oral presentation.

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

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, 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, M.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, M.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. Oral presentation.

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, M.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. Oral Pres.

**Presentations (continued):**

Houts, M.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 presentation.

Houts, M.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, M.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.

**WORKSHOPS/SEMINARS:**

- Central Plains Aquatic Bioassessment and Biocriteria Symposium. Sept 18-19, 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:**

- Knowledge of UNIX, DOS, and Windows systems
- Advanced experience using ERDAS Imagine for image processing
- Extensive experience using ARC/INFO, ARC VIEW, ArcGIS
- 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
- Experience using Spectroradiometer, LAI 2000, Sunfleck Ceptometer, and GPS unit
- Ability to analyze and summarize field and satellite data
- Able to plan, acquire, and interpret aerial photographs

**REFERENCES:**

Available upon request.