Applied Spatial Statistics Using R
and ArcGIS ver 10.4
Introduction

ERIA Consultants, LLC
Dr. Michael Tuffly
mtuffly@eriaconsultants.com
http://www.eriaconsultants.com

Outline

This one day (8 hour) course slated for 6/8/2016 from 8:30 AM to 5:00 PM MDT is a hands on applied workshop designed to teach people how to correctly apply spatial statistics to spatial data. We will be using the statistical program "R" coupled with ArcGIS. Topics that will be covered are: programming in "R", Linear Regression, Spatial Weight Matrix creation, Moran's I, General Least Squares (GLS), Variograms, Covariance functions, and spatial-temporal analysis. At the end of the workshop attendees' will be able to: 1) create a basic program in "R", 2) assess and evaluate spatially correlated data, and 3) adjust statistical models for spatial autocorrelation.

Target Audience

This course is designed for beginners to experts. It would be extremely helpful to have a basic understanding of statistics, ArcGIS, and some exposure to computer programming. As with most workshops the more one knows going into the course the more you will take home. This will be an all day workshop with breaks

Benefits

If desired, participants will be able to get GIS Professional (GISP) educational credits. These educational credits can be apply for the GISP certificate or for recertification credits (http://www.gisci.org/). This course also can be used for continuing education credits (CE) for the American Society for Photogrammetry and Remote Sensing (ASPRS) Certified Mapping Scientist (CMS) certification (http://www.asprs.org).   Also this course can be used for Certified Forester Education (CFE's) from the Society of American Foresters (http://www.safnet.org).

Prerequisites

A willingness to learn. As with most workshops the more one knows going into the course the more you will take home. It is required that attendees have knowledge of basic statistics, fundamental knowledge of R, and basic computer programing skills.

Needed Equipment
This workshop will be given online (Webinar). If given online attendees will need an internet connection, a computer with ArcGIS (ver 10.3 or better) and the statistical program "R" (ver 3.2.0 or better) installed. I will supply the data, manuals, and personal instruction.

Instructional Theme
Most examples and exercises in this workshop are environmental based. That is, exercises primarily use publicly available data from government agencies such as: USGS, EPA, USFS, and BLM.

 Cost
This workshop has a $280 fee and is payable by check. Send an email to mtuffly@eriaconsultants.com with your contact information or ask for more information. We need at least eight attendee signed up to have the workshop move forward.

Instructor's Bio
Michael Tuffly is the Principal for Environmental Resource Inventory and Analysis LLC (ERIA Consultants, LLC) in Boulder, Colorado. He is also a Certified Mapping Scientist, Remote Sensing from the American Society for Photogrammetry and Remote Sensing (ASPRS), Certified Forester from the Society of American Foresters (SAF), Certified Senior Ecologist from Ecological Society of America (ESA), and a GIS Professional (GISP) from the Geographic Information System Certification Institute (GISCI). Mike holds a B.S. in Forestry, an M.S. in Natural Resource Management from Humboldt State University and a Ph.D. in Forest Science from Colorado State University in Fort Collins, Colorado. Dr. Tuffly has over 30 years of experience in applied GIS and spatial modeling for federal, state, private, and nonprofit organizations. In addition, he has over 30 years addressing various fire, natural resource and forest management issues in the United States and abroad. He has been an adjunct Professor in the Warner College of Natural Resources at Colorado State University in Fort Collins, Colorado. Mike has a term, on the SAF Forester Certification Review Board (CRB), from 2013 to 2016. He serves on the Professional Review Committee (PRC) of the CRB. He also serves as the 2014 President of the Rocky Mountain Region of ASPRS. He is also on the GISCI certification review committee since 2012.