

Applied Spatial Statistics Using R and ArcGIS ver 10.4 Intermediate



ERIA Consultants, LLC

Dr. Michael Tuffly

mtuffly@eriaconsultants.com

<http://www.eriaconsultants.com>

Outline

This one day (8 hour) slated for 6/9/2016 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”, Geographically Weighted Regression (GWR), Classification and Regression Trees (CART), Inverse Distance Weighting (IDW), Ordinary Kriging (OK), and ensemble modeling (e.g. small scale and large scale variability). 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, 3) adjust statistical models for spatial autocorrelation, 4) model spatial data in a scientifically defensible environment and 5) create R looping functions. This course is designed for intermediate programmers. It would be highly advisable to have a basic understanding of statistics, ArcGIS, and exposure to computer programming. As with most workshops the more one knows going into the course the more one will take home.

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 applied 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 programming skills.

Needed Equipment

This workshop can be given in person (on-site) or 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. It is preferable if you take this intermediate workshop that you also take the introduction workshop offered on 6/8/2016. But this is not mandatory. 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.

