Bridging the Gap: Integrating R and ArcGIS for Advanced Analysis

Marjean Pobuda
R and RStudio
Introduction to R and RStudio

• R is a statistical powerhouse programming language with thousands of libraries containing various statistical functions. These include functions for:
  - Data aggregation and manipulation
  - Statistical analysis
  - Spatial analysis
    - Vector and raster
  - Data classification and prediction
  - … and more!

• RStudio is an integrated development environment (IDE) for R that provides a well-designed space to develop scripts, learn about packages and their functions, and visualize plots.
R-ArcGIS Bridge
Introduction to the R-ArcGIS Bridge

The R-ArcGIS bridge allows you to connect ArcGIS to R and enables the seamless transfer of data back and forth, along with the ability to create Geoprocessing tools based on R scripts.

Reasons you might need the bridge:
• A particular tool or action is easier to perform in ArcGIS or R.
• A particular tool or analysis only exists in ArcGIS or R.
• You want to share R functionality with others who are not familiar with R.
• You need easy access to spatial data contained in shapefiles, geodatabases or stored online.
Running the R-ArcGIS Bridge

What Do I Need?

- ArcGIS
  - ArcGIS Pro 1.1 or later
    - Uses 64-bit R
  - ArcGIS 10.3.1 or later
    - Uses 32-bit R
    - Or set-up Background Geoprocessing and use 64-bit R

- R
  - Accept all defaults to obtain both 64-bit and 32-bit versions

- RStudio <optional>
  - Can easily select to work with either 64-bit or 32-bit version of R
Introducing the R-ArcGIS Bridge

Expanding Workflows and Creating Script Tools
Introducing Raster Functionality
Coming in Pro 2.1
Resources
Learn More on Using the R-ArcGIS Bridge

Getting Started:
- Analyzing Crime Using Statistics and the R-ArcGIS Bridge Learn Lesson
- Using the R-ArcGIS Bridge Introductory Web Course
  (https://www.esri.com/training/catalog/58b5e417b89b7e000d8bfe45/using-the-r-arcgis-bridge/)

Creating R Script Tools:
- Integrating R Scripts into Geoprocessing Tools Web Course
  (https://www.esri.com/training/catalog/58b5e578b89b7e000d8bfff6/integrating-r-scripts-into-arcgis-geoprocessing-tools/)
  - arcgisbinding Package Vignette
    (https://r-arcgis.github.io/assets/arcgisbinding-vignette.html)

Upcoming Live Seminar Training
- Go Deeping with Data Analytics Using ArcGIS Pro and R – Thursday, August 31st
The R-ArcGIS Community

GitHub (https://r-arcgis.github.io/)
- Detailed information on the R-ArcGIS bridge installation.
- Community-based script tools and projects for collaboration.

GeoNet (https://geonet.esri.com/groups/rstats)
- Community support forums on questions or ideas you have.
- Additional resources like blogs, demo videos, and slides.
Please Take Our Survey on the Esri Events App!

Download the Esri Events app and find your event

Select the session you attended

Scroll down to find the survey

Complete Answers and Select “Submit”
Presenter Resources
Aspect Ratio Test

If this shape does not appear as a perfect circle, adjust the aspect ratio of your display until it does.

Try the resolution 1920x1080 for 16:9 displays.