ArcGIS Training in Cameroon

1. Introduction

Juniper GIS is partnering with the *Society* for *Conservation GIS* to offer intensive ArcGIS training courses this

coming July 2016. (The Society for Conservation GIS (SCGIS) exist internationally as 'a non-profit organisation that contribute significantly in filling needed GIS Capacity gaps. This gap is fulfilled through providing capacity building opportunities, supporting organisations and individuals using GIS and science for the conservation of natural resources and cultural heritage). The SCGIS-Cameroon chapter for SCGIS was put in place in 2007.   We will offer two sets of courses within a period of two weeks. The first week will focus on *ArcGIS for Environmental Analysis* class at the Limbe Botanic Garden, July 11-15, 2016 and then the second week will provide *Advanced Topics for ArcGIS* from July 18-22, 2016.

Students at a Juniper GIS class in Uganda

The classes will be taught by John Schaeffer and will be facilitated by two Train the Trainers (TTT) candidates. The classes will be taught in English, but interested French speaking candidates will be assisted by facilitators.

2. About the trainer

John is a certified GIS trainer with over twenty years in teaching and using GIS, with an emphasis on conservation GIS. Juniper GIS courses are based on real projects, reinforcing the skills needed to successfully and efficiently complete your projects. John has taught extensively in the US, and also in Kenya, Uganda, Tanzania, South Africa, Russia, Colombia, Bhutan and Mexico to a wide variety of state, local and federal agencies and many conservation groups, including the Jane Goodall Institute, Greenpeace, and SCGIS.

"I have used my new knowledge and understanding of EVERY DAY GIS since I've returned. It was such a worthwhile training on so many fronts. Thank you so much John and Patti!!" – Lisa H, Boise Idaho, who took this same class in Akumal, Mexico

3. Cost

The cost of each class is 150000 FCFA for Cameroonians and 250000 FCFA for non-Cameroonians. To register and make payment, Cameroonians can contact Gaston Buh at buhgaston@yahoo.com. Meanwhile, Non-Cameroonians and students wishing to pay the equivalent in USD or by Visa or MasterCard can contact John Schaeffer at john@junipergis. The payment in USD will be $260 for the Cameroonian and non-Cameroonians $435 with a 2% surcharge for Visa or MasterCard. Seats are limited, especially for the first week – ArcGIS for Environmental Analysis, so it is recommended that you register early. The cost will cover training materials, Coffee break, lunch and a certificate by Juniper GIS at the end of the training.

The course descriptions for the two classes are below. If you have more questions on course content, please feel free to contact John Schaeffer at john@junipergis.com. If you have questions about the course location, facilities, or lodging in Limbe, contact Gaston Buh at buhgaston@yahoo.com.

4. <u>Venue of course</u>

Limbe is a coastal town located in the southwest of Cameroon in central Africa. It is less than 2hrs drive from the Douala International airport. It is part of the Mt Cameroon region with interesting attractive sites within walkable distances such as the Limbe wildlife Centre, the Limbe Botanic Garden, lava flows with sandy and rocky beaches. The Month of July is a raining season in Limbe with temperatures sometimes above 27 degrees.

5. <u>Course description</u>

**Week1: Working with ArcGIS for Environmental Analysis**

This one-week intensive course will focus on core GIS skills and introduce some advanced topics, all with an emphasis on conservation GIS. This class is appropriate for new GIS users and for experienced GIS users wanting more in-depth instruction.

Core GIS skills include compiling and organizing data, understanding projections, using symbology and labels to understand the data, working with tables to maximize the database functionality of GIS, using edit tools to create and clean the data, performing analysis, and creating finished maps. Students will also learn some advanced skills – working with Spatial Analyst, using raster GIS techniques for analysis, using ModelBuilder to create models for analysis, and moving data to and from Google Earth.

Students will practice and improve these skills while working through typical GIS projects that include identifying areas for elephant habitat, displaying coral abundance levels on reefs, and corridor analysis. These projects will use conservation and natural resource data from the US, Kenya, Mexico, and local data where applicable.

Week2: Advanced Topics for ArcGIS – These are advanced courses and if you do not plan on taking the <u>ArcGIS for Environmental Analysis</u> course, you should have the equivalent GIS experience or training.

Working with Geodatabases and Linear Referencing, 2 days. This course introduces users to the Geodatabase, a data format that provides enhanced tools for data creation, data modeling, and data validation. Participants will learn how to design, create and manage Geodatabases. At the end of the course, students will have an in-depth understanding of the Geodatabase structure and how to use subtypes, domains, and Geodatabase topology to clean data and maintain data integrity. Since one of the strengths of a Geodatabase is to validate and correct data, there will be many examples of editing, particularly with specialized Geodatabase editing tools and other advanced editing methods. In the last section students will learn how to create routes and use linear referencing for analysis working with stream and fish data.
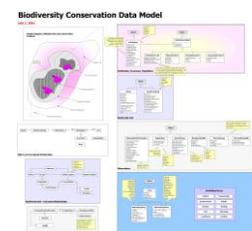
Working with ModelBuilder, 1 day. Students will learn how to use ModelBuilder to both automate basic workflows and to perform complex analysis. The course will first cover the ArcGIS Geoprocessing environment, which provides the foundation for ModelBuilder operations. Students will then learn how to create models and tools (dialog boxes with user input) in ModelBuilder. The models will cover a variety of functions, including iteration, batch operations, process models, and branching. Students will also learn how to add Python Scripts to ModelBuilder and how to use sub-models. This is a practical, hands-on course designed to increase your productivity, making both analysis and basic tasks more efficient.
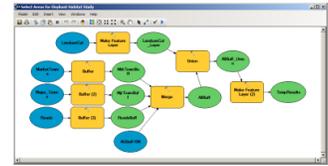
Using Spatial Analyst for ArcGIS, 2 days. This course introduces participants to the Spatial Analyst extension and using Raster GIS by working through several projects. The first project illustrates basic raster functionality by locating the best site for a solar installation. The second project demonstrates more advanced analysis by determining wildland fire hazard zones. A third project explores the process of analyzing water tables and the impact of irrigation, providing an opportunity to look at the Hydrology sample provided for ArcGIS. The final projects combine the skills learned in earlier projects to locate sites for elephant conservation zones in Kenya and to do least-cost path analysis to find the best corridor between an elephant herd and a reserve area.

In this second class, there will be ample time for people to work on their own projects, especially if you take both classes. For more information on these courses please contact John Schaeffer at **john@junipergis.com**.

6. Computer Requirements

You will need to bring your own laptop for the Cameroon classes. The classes will be taught using ArcGIS 10.3.1 or 10.4. If you already have ArcGIS installed on your laptop, there should be no problem if you have either 10.2 or higher, with an ArcView\Desktop Basic license and Spatial Analyst for the first class – ArcGIS for Environmental Analysis. There are also some exercises using Excel, but any version of Excel 2000 or higher should work. If you are taking the second week – **Advanced Topics in ArcGIS** – you will need the ArcEditor\Desktop Standard license and Spatial Analyst.

We will provide evaluation copies of ArcGIS 10.4 ArcDesktop Standard and Spatial Analyst. If you want to get the software in advance, you can download an evaluation copy from ESRI at: http://www.esri.com/software/arcgis/arcgis-for-desktop/free-trial. We will organize a software loading party the Sunday before class, but if you can get the software installed in advance, that will be best.

Students will need a computer with Window's 7 or higher, though Window's 7 is recommended, with at least 2GB of ram, a CPU speed of 2.2 GHz, and an Intel Premium 4 or higher processor. Mac laptops running a Window's emulator should work OK. You will also need .NET Framework 4 SP1 or higher installed, which will be standard for most Windows' computers running 7. For more details on computer specifications see: http://www.esri.com/software/arcgis/arcgis-for-desktop/system-requirements. The data will take about 800mb and if we install ArcGIS, we will need about 4gb to copy the install program over to your computer. Please plan on plugging in your laptop as the process can take up to an hour.

We recommend that your laptop has a 12" or larger screen. With some of the small "notebook" computers, you cannot see the entire dialog box for some operations, including a critical one for installing ArcGIS and if that is the case, we may not be able to install ArcGIS. We also recommend using a mouse because ArcGIS requires significant interaction with the screen, much more than doing word processing or spreadsheets and even if you are an expert with the laptop's thumb pad, you will find a mouse much more efficient.