

Unraveling the Mysteries of Nature

GIS Camps in Germany, Switzerland and Rwanda

ESRI summer camps: combining spatial learning with modern technology in an outdoor environment. Since 2006 ESRI Germany is offering free GIS summer camps, inspiring and motivating young people to think spatially and explore their environment. In 2010 a total of eight camps will be held in Germany, Switzerland and Rwanda.

By Daniel Schober

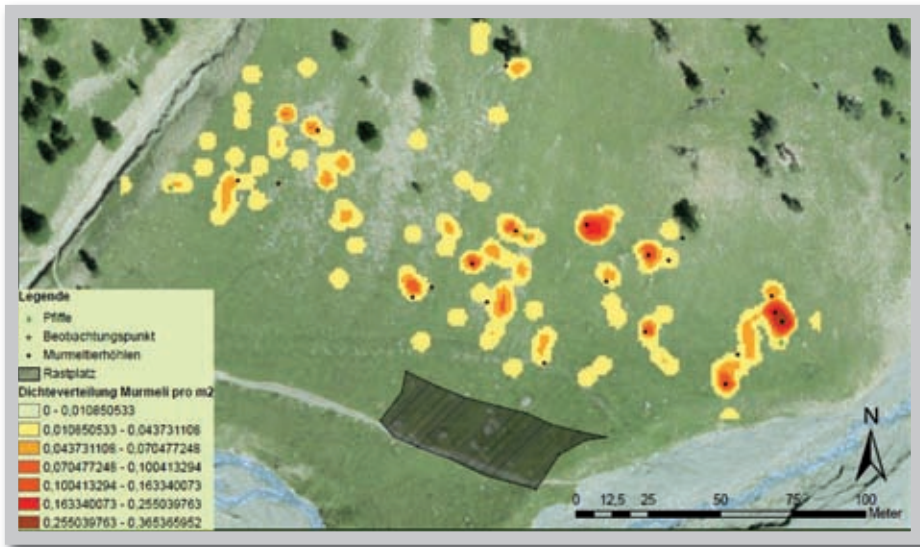
rounding different topics in national parks all over Germany and Switzerland. With two summer camps already being held in Rwanda it is safe to say that learning with geo-technologies is equally fascinating for young people throughout different continents. Following the theme of “observing, comprehending, and applying” each one of the week-long camps is identically structured: starting off with activities like geo-caching or geo-painting, the students make first

It all began four years ago: In 2006 twenty high school students came to the Bavarian Forest national park to take part in an experiment. In cooperation with the national parks’ department for environmental education, ESRI Germany had invited students to experience nature and the national park in a new way: By using GIS, GPS and mobile computers. The outcome was impressive, without any knowledge about GIS the students dove right into using ArcGIS Desktop and ArcPad and started collecting, analyzing and visualizing environmental data. At some point the young researchers had virtually to be dragged out of the pouring rain to interrupt their work until weather had cleared up. At the end of the week there was not doubt, the first ESRI summer camp had successfully been launched.

This was the beginning of a series of exciting one-week research camps, teaching hundreds of children about important questions sur-



ESRI summer camp Rwanda: Students presenting their work



Student poster ESRI summer camp Swiss National Park: Distribution of a Groundhog population

practical experiences with ArcPad and mobile computers through playful applications of GIS and GPS. Day two through four the students are collecting data in the field, making analyses with ArcGIS Desktop and creating maps with their findings. Finally, on the last day the participants are presenting their results to an audience before receiving their well-deserved certificates. Throughout the week the students are being accompanied by ESRI personnel and experienced staff from the national parks sharing their knowledge with the young researchers. But it is not all work and no play, throughout the week there is a full range of additional activities like campfire, night hikes, sports and swimming.

Understanding the Environment through GIS

National parks develop largely without human intervention. But what exactly is happening and why? Geographic information systems are helping to recognize, to understand and to represent the underlying laws of nature. ESRI summer camps are being carried out in cooperation with national parks integrating geo-technologies, such as GPS, GIS, and the use of mobile computers into environmental education. While most of the national parks are already using GIS extensively for research of their respective ecosystems, there was little to no application of technology in environmental education. Establishing a sensible connection between experiencing nature and applying the proper technology is a natural fit.

“Nowadays you cannot expect young people being exposed to nature on a regular basis. We’ve had kids in camps that had grown up in metropolitan areas with no nature around, except for some parks in the city. They made their first contact with nature in the camp. It is great to see how fascinating this experience

is for young people and also how quickly they are adapting tools like GIS. Through the camps we are hoping to make learning fun, inspire young people to think spatially and maybe even awake dormant talents for future GIS experts.” says Susanne Tschirner, project manager for the ESRI summer camps.

Getting Prepared for Spatial Careers

Since 2008 ESRI Germany is organizing a nation-wide school competition. Its winners are invited to a summer camp in the national park of their choice with ESRI paying for travel and accommodation. This year six summer camps will take place in Germany. Furthermore, ESRI summer camps are held in Switzerland and in Rwanda.

With schools usually having less and less time for increasing curricula content, explorative learning in an informal setting is something new to both students and teachers, thus making it an exciting experience for all parties. However the feedback of the accompanying teachers is unanimously positive: most of the students



Students analyzing data with ArcGIS Desktop

were highly fascinated working with GIS and produced impressive results. With the ability to think spatially and GI skills becoming increasingly important in the workplace, programs as the ESRI summer camps can enhance the teaching of a broad range of subjects.

And the concept is spreading: Several schools, universities and other institutions have started to organize their own research camps tackling the “where and why” and trying to answer them through GIS. Whether it is exploring environmental change over time by analyzing landscape change or surveying animals and pathways in the local zoo, the use of modern technology is clearly giving students additional motivation to start exploring. Very little time is wasted getting the students to work with the tools. Almost all of them are having an amazingly fast approach to GIS software and mobile computers.

Digital Natives making Spatial Decisions

After all we are talking about the generation of Digital Natives, staying in touch with their friends over social media and locating them using Google-Latitude with their GPS-enabled iPhone - sharing, living and communicating online. Nonetheless this generation will have some serious issues to solve: Will resources run out? How to live in a sustainable way? What is the impact of global climate change? Raising spatial awareness – not only - for these issues is imperative for the ability to think spatially and foster proper decision making. Using modern tools like GIS and GPS in environmental education will not only get students extra motivated to engage themselves in certain topics. It will also make them aware of the possibilities decision making tools like GIS are offering them to solve future problems. With technology in their hands and working on real-life questions, young people are realizing that they can make a difference. It is on us to help them building confidence in their abilities to ask the right questions and to give them space to explore freely. Thus the concept of learning is being raised to another level, not as an end in itself but as an open and life-long process. Geo-technologies can act as a valuable resource to support this task.

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Since 1999 the education team of ESRI Germany and Switzerland are working closely with universities, schools and other educational institutions to foster spatial learning. More information on the ESRI summer camps can be found here:

<http://esri.de/schule/camps.html>