

ESRM430 SPRING 2012

Instructor: Dr. L. Monika Moskal

Lab 1

Lab Objectives:

- Introduction to image interpretation
- Introduction to satellite and aerial imagery

Tools:

- Geo-Wiki software

What you will hand in:

- Short answers for 2 questions will be submitted using the digital course drop box
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We will spend the lab session introducing image interpretation and land -use land cover classification through the use of a website called Geo-Wiki. You are encouraged to explore this website on your own as it will help you with developing image interpretation skills. You will also learn how to submit your lab assignments using the digital drop box.

Geo-Wiki is a project founded in 2009 by the project partners the International Institute for Applied Systems Analysis, University of Applied Sciences Wiener Neustadt and University of Freiburg. The Geo-Wiki Project is a global network of volunteers with the common goal of improving the quality of global land cover maps. Since large differences occur between existing global land cover maps, current ecosystem and land-use science lacks crucial accurate data (e.g. to determine the potential of additional agricultural land available to grow crops in Africa). Volunteers are asked to review hotspot maps of global land cover disagreement and determine, based on what they actually see in Google Earth and their local knowledge, if the land cover maps are correct or incorrect. Their input is recorded in a database, along with uploaded photos, to be used in the future for the creation of a new and improved global land cover map.

Lab Exercise:

Step 1 – Go to the GEO- Wiki website. <http://competition.geo-wiki.org/login.php>. Log in as:

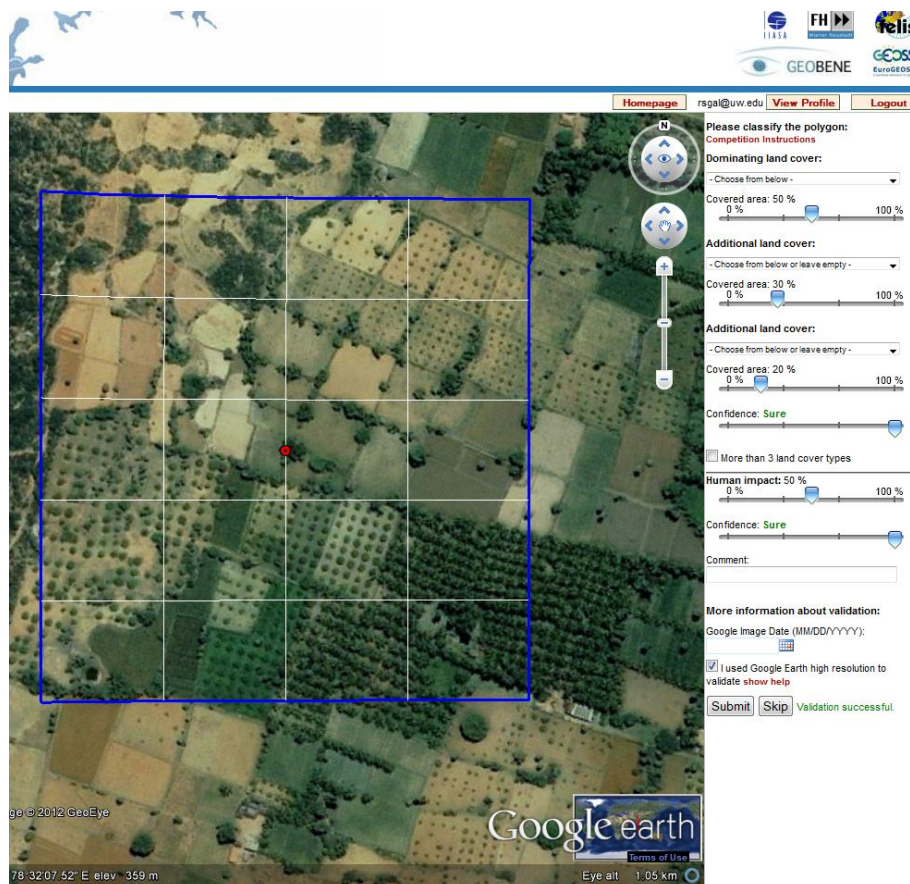
Login: rsgal@uw.edu

Password: r\$gal

Step 2 - Geo-Wiki will zoom to a random location in the world using Google Earth and ask you to classify the image scene. The area that you are being asked to classify is outlined in blue. Complete the classification in the column to the right of the image. First determine the dominating land cover type. Next, determine the percent that land cover type covers in the area within the blue polygon.

The grid is used to help determine percent land cover type. You can determine how many of the grid cells are composed of a particular land cover type. There are 20 grid cells in total. If 10 of the grid cells are covered with trees, you could determine that the tree cover is 50%. Click on the “Competition Instructions” for examples of the different land cover types (See pages 4 & 5).

Add any additional land cover types contained within the polygon. The percent cover cannot be greater than 100% and can only be adjusted in 5% increments. If there are more than 3 land cover types fill out the top 3 land cover types and click the box “More than 3 land cover types.” Share your classification with your neighbor and get their opinion, ask if they agree with your how you classified your image. Also, you must estimate the confidence you have in your classification. Choose one of the confidence levels: Sure, Quite Sure, Less Sure, Uncertain. **QUESTION 1: What factors impact your ability to classify the image? List at least 3. How could you have a 100% certainty in your classification?**



Step 3 – Determine the human impact within your grid cells. The level of human impact ranges from 0 – 100% . Urban areas would have a high level of human impact (i.e. New York City), while wildland areas would have a low level of human impact. Any evidence of roads or buildings can indicate the level of human impact. This question is basically asking you to tell Geo-Wiki what percentage of the polygon is covered by “obvious” human activity. “Obvious” activities must have evidence of human disturbance through direct actions (habitat removal through the construction of a road, or plowing of a field). Although some areas are greatly impacted by human activity, such as suppression of natural fires in forests, these are not considered in this classification. Share your decision with your neighbor and get their opinion. Choose one of the confidence levels: Sure, Quite Sure, Less Sure, Uncertain.

Step 4 – Add any comments you have after classifying the image in the comments field. If you had difficulty classifying the image or determining the human impact explain this here. For example, if there was an issue with the resolution of the imagery add this to the comment field. If you had no difficulty classifying the image you do not need to fill out the box.

Step 5 – Add in the Google image date in the Google Image Date (MM/DD/YYYY) field. The image date is located in the bottom left corner of the image. For some polygons there will be no record of the image date . If that is the case, leave this field blank. Click the box “I used Google Earth high resolution to validate” only if you used high resolution imagery for your classification. **QUESTION 2: How can you determine if the imagery is high resolution or not?**

Step 6 – Repeat steps 2 – 5 until you feel comfortable with your image interpretation skills. It is important to get plenty of practice at image interpretation, as it will be an important skillset to have throughout the course.

Step 7 – Submit responses to Question 1 and 2 to the digital drop box. You will use the ESRM430 digital drop box to submit all of your lab assignments as well as other course submissions. For each lab you will see a drop box link appear on the weekly schedule on the course website the day of the lab. Click the link and follow the prompts to upload the files you wish to submit.

Congratulations, you are done with Lab 1!