

## Research paper assignment for NGEA03

Science and research are based on scientific methods, such as the hypothetico-deductive model. This model is based on the principle that we can pose a hypothesis that can be tested and falsified. In real-life science this often means we design an experiment for testing and evaluating the hypothesis, and present the test and outcome in a clear way that allows others to reproduce the test. This is the basis of the peer-reviewed scientific literature, where anyone can submit a manuscript (a report of a specific research study) to one of the many scientific journals, have it scrutinized by at least two reviewers (experts that carefully read and comment the presented research), and if accepted have it published and presented to the rest of the scientific community.

In this assignment you will work in pairs, each pair working with two research papers on the topic of remote sensing. You will work together to present these two papers from the publishers, reviewers and readers point of view in a written form, and then make an oral presentation of the highlights from the published paper and your opinion on the study.

### General study questions about scientific papers (*hand in not needed*):

1. What is meant by a scientific paper? What procedure does the paper have to go through before it will be published?
2. Describe the difference between the following types of papers:
  - a. Research paper
  - b. Review paper
  - c. Short communications/letters
3. What is measured by the *impact factor* of a scientific journal?

## Written report and oral presentation

Read the two papers and go through the **Journal issues**, **Review issues** and **Reader issues** together with your paper-mate (a detail description of the issues can be found on the next page). Divide the work between you, so that one of you take care of the journal issues for the first paper while the other focuses on review issues. Then switch roles for the next paper! Both should contribute with “reader issues” for both papers.

### Written report: Hand in at any time between April 15 and June 03

Prepare a written report together with your paper-mate. The report should be carefully prepared and deal with “journal issues”, “review issues” and “reader issues”. The author responsible for each review section should be clearly stated. The total report should be 2-3 pages long, Times New Roman, 12 pt, single line spacing. Mail your report to [anna\\_maria.jonsson@nateko.lu.se](mailto:anna_maria.jonsson@nateko.lu.se) on **June 03** at the latest.

### Oral presentation: June 5

Prepare an oral presentation together with your paper-mate. Each presentation (one per paper) should be about 5 minutes long, aiming to given an overview of the key aspects of the paper, capturing the essence but not the details of your written review. Give some extra thought on what is most important to tell the audience, given the short time for presentation! Below is an example of an outline.

Start by giving a brief summary of the article:

- Why was the study carried out?
- What was the key findings?
- How did the paper contribute with new knowledge?

Then give your main impressions of the article:

- Based on your review, what is your opinion on the paper?
- Is it novel and interesting, did it have sufficient impact and did it add to the knowledge base?

## Evaluation and marks

The assignment will be marked based on both the written report and the oral presentation. Marks are U (not passed), G (passed) and VG (passed with distinction).

**Journal issues (reviewer X paper 1; reviewer Y paper 2):** *research community perception of the paper*

- In what kind of scientific journal was the paper published?  
(journal name, impact factor, numbers of volumes/year)
- What kind of papers do the journal usually publish?  
(the aims and scope of the journal is commonly described at the journal homepage)
- What kind of paper is this (an original article, short communication, or review)?
- What is the focus of the paper in relation to remote sensing?  
(method development/detection/detection of changes over time/experimental-technical/...)
- Describe the importance of the study in a wider perspective: How does it contribute with new knowledge?
- How many other papers have cited this paper?
- When (and why) was the paper cited?

**Review issues (reviewer Y paper 1; reviewer X paper 2):** *an after publication quality check*

- Introduction: Was the aim of the study well described? Were any hypothesis stated?
- Material and method: Were the data sets clearly described, e.g. the spatial and temporal resolution of the remote sensing data?
- Result section: Were the hypothesis tested with appropriate statistical tests? Were the results correctly interpreted? Is information provided in tables and figures easy to interpret? Are the table headings and figure captions “self-explanatory”?
- Discussion and Conclusion: Did the study meet the aim? Were the study results sufficiently discussed in the context of earlier findings, with references to the work of others?
- Would you recommend a follow up study, using other sets of remotely sensed data (higher spatial/temporal resolution, other wave bands, or perhaps other study sites)? Why would this lead to novel results or better understanding?

**Reader issues (reviewer Y and X, both papers):** *Shortly describe your general thoughts about the paper*

- Was it easy to understand the study aim, hypothesis and conclusions?
- Was it possible to follow the methods used? Was it too detailed or too general?
- How about the terminology, was it easy or difficult to understand?

Paper	Reviewer 1	Reviewer 2
Multitemporal analysis (1940-1996) of land cover changes in the southwestern Bogotá highplain (Colombia)		
Impacts of forest cover change on ecosystem services in high Andean mountains		
Application of Aerial Photography and Photogrammetry in Environmental Forensic Investigations		
The history of intertidal blue mussel beds in the North Frisian Wadden Sea in the 20th century: Can we define reference conditions for conservation targets by analysing aerial photographs?		
Calibrating Corn Color from Aerial Photographs to Predict Sidedress Nitrogen Need		
Aborigine-managed forest, savanna and grassland: biome switching in montane eastern Australia		
Quantitative assessment of vegetation structural attributes from aerial photography		
Braided River Flow and Invasive Vegetation Dynamics in the Southern Alps, New Zealand		
Optimizing templates for finding trees in aerial photographs		
Evaluating Light Availability, Seagrass Biomass, and Productivity Using Hyperspectral Airborne Remote Sensing in Saint Joseph's Bay, Florida		
Using aerial photography for identification of marine and coastal habitats under the EU's Habitats Directive		
Historic land cover change in the agricultural Midwest using an object-based approach for classification of high-resolution imagery		
Estimating basal area coverage of subtidal seagrass beds using underwater videography		
The Influence of Land Use Change on Landslide Susceptibility Zonation		
River and landslide dynamics on the western tanganyika rift border, uvira, dr congo		
A methodological study for biotope and landscape mapping based on CIR aerial photographs		
Mapping of Periglacial Geomorphology using Kite/Balloon Aerial Photography		
Detection of Vegetation Degradation on Swedish Mountainous Heaths at an Early Stage by Image Interpretation		
High-resolution vegetation data for mangrove research as obtained from aerial photography		
Stream change analysis using remote sensing and Geographic Information Systems (GIS)		
Biophysical and Biochemical Sources of Variability in Canopy Reflectance		
Quantifying the cool island intensity of urban parks using ASTER and IKONOS data		
Progressive abandonment and planform changes of the central Platte River in Nebraska, central USA, over historical timeframes		
Glacier variability (1967-2006) in the teton range, Wyoming, United States		
Classification of Australian forest communities using aerial photography, CASI and HyMap data		
Malaria incidence in nairobi, kenya and dekadad trends in ndvi and climate variables		
Water balance approach for rainwater harvesting using remote sensing and GIS techniques, jammu himalaya, india		
The use of large scale Aerial photography to inventory and monitor arid rangeland vegetation		