About the ~~non~~-sexiness of ecological landscape monitoring.

National monitoring programs are often criticize by scientific publications but also from the society itself: Ecological landscape monitoring is ineffective, expensive, use not adequate modern methods according to design, field measurements, data analysis and - from a research perspective – is simply boring. Often, monitoring programs are policy driven and the collected data as related reports "disappear" in the bureaucratic world, e.g. the EU commission. The data collected and the results are often conceptual and difficult to explain for the society.

However, data are required in order to make decisions about current and future use of the landscape and without high quality data the finding of god sustainable resolutions would not be possible. Even the fact that good frame works exists about how to build these monitoring programs as several scientific publications, landscape monitoring seems to have a bad reputation. Who is starting to study biology for working with landscape monitoring in the future? Until today, no master course of ecological monitoring exists at the Swedish University of Agriculture (SLU); however, SLU is managing several of the largest national landscape monitoring programs in Sweden. Monitoring programs – ore we that work with them - seems to have a public relation problem!

In my talk, I will present examples of our work showing that monitoring data can provide practical solutions for real live problems, is working with most modern statistical methods and using new and advanced technical equipment for data collection.

Example 1: In 2018 I was asked if I can provide a lichen map covering the area south east of Sveg in Härjedalen. In the area existed an ongoing conflict between three different reindeer-herding districts and private forest owner about the use of ground lichen rich areas outside the official reindeer-herding districts. On key of the solution was to divide the area in three different parts (one for each reindeer-herding district). The division should base on the available amount of ground lichens, in other words, each reindeer-herding district should become access to similar amount of ground lichen, the main food resource for reindeer under wintertime.

Example 2: The total area covered by ground lichens in Sweden has declined by 70% in the last 60-70 years, a threat for reindeer herding. With the analysis of long term monitoring data from the National Forest Inventory we are analyzing within a PhD project what kind of forest variables are affecting the decline of lichens.

Example 3: Inventory programs has in general the problem to get enough information about uncommon landscape feature. This year within the Swedish alpine inventory, we were using time series analysis of satellite data in combination with laser scanning data within a two-step sampling approach to solve this problem.

Example 4: Matching field data with satellite images are problematic because often the resolution of the satellite image rarely match the resolution of the sample plots (pixel size – plot size). We introduce the use of drones in the Swedish alpine inventory to fill the missing link between field data and satellite images including deep learning algorithms.

These examples shows how we att SLU are using most modern sampling design, data analysis tools, and technique to provide most effective inventory data that are meeting relevant questions of the society. We just have to publish, present and talk about that – building a good public relation.