

## Remote sensing 101

The following questions were asked during our live webinar with David Pairman but due to time restrictions, we were unable to answer these in the session.

### **Is there a book, an online course, or anything else you'd recommend as a way to learn how to use satellite imagery in GIS?**

There are literally thousands of books and other material available online about remote sensing. I'm not sure I can really give good recommendations on these. Some texts are often referenced such as the "Manual of Remote Sensing" (a series of at least four volumes focused on different aspects) or the "Remote Sensing Handbook" series. However, these are weighty and probably more useful as references. Also, they may not cover more recent developments - especially earlier editions. I think just google around until you find something at the level you want and covering the aspects you are interested in.

### **What differentiates the surface model from the terrain model?**

A surface model follows the highest point including trees buildings etc, whereas a terrain models follow the ground elevation. Digital elevation model (DEM) is also a term often used which is very similar to DTM - the latter typically augments a DEM using other information such as break lines or river lines.

### **Has remote sensing been used for land use mapping?**

Remote sensing typically provides land cover. Land use may be inferred from that with the addition of other non-remote sensing information or by looking at temporal patterns. We have done quite a lot on determining different land uses within the cropping context by employing temporal sequences. For instance differentiating arable crops from feed crops. Deep learning techniques may be able to detect infrastructure or other patterns to more directly help determine land use, and this is an active area of research.

### **Will David talk today about uncertainty analysis?**

I only touched on it by discussing the importance of actual data distributions matching the assumed distributions in parametric classifiers. Also the importance of using truth data (independent from training data) to assess algorithm performance.