

## Crops & Soil: Remote sensing for Agriculture

**23 April 2021, 09:00am – 14:15pm**

Online (*link to be sent to participants directly*)

<p><b>Host supervisors:</b> <i>Sandra Telfer &amp; Justin Travis</i></p> <p><b>Host students:</b> <i>Daniel Dornan</i> (<a href="mailto:d.dornan.20@abdn.ac.uk">d.dornan.20@abdn.ac.uk</a>) <i>Tamsin Woodman</i> (<a href="mailto:t.woodman.20@abdn.ac.uk">t.woodman.20@abdn.ac.uk</a>)</p>	
	
09:00 – 09:15	<b>Welcome &amp; introduction</b>
09:15 – 09:45	<b>Group updates on projects</b>
09:45 – 10:15	<b>What is remote sensing?</b> <i>Speaker: Maddie Grady, Forest research</i>
10:15 – 10:30	<b>Q&amp;A Session</b>
10:30 – 11:15	<b>Journal club discussion:</b> “Remote sensing for agricultural applications: A meta-review” by Weiss, et al. (2020). <i>Moderator: Daniel Dornan</i>
11:15 – 11:30	<b>Screen break</b>
11:30 – 12:15	<b>Workshop: Lidar in R</b> <i>Moderator: Tamsin Woodman</i>
12:15 – 13:00	<b>Lunch</b>
13:00 – 13:30	<b>Modelling land-use change</b> <i>Speaker: Dr Peter Alexander, University of Edinburgh</i>
13:30 – 13:45	<b>Q&amp;A Session</b>
13:45– 14:00	<b>Breakout room:</b> <i>What are the wider implications of remote sensing data and modelling techniques?</i>
14:00 – 14:15	<b>Conclusion &amp; End of the day</b> <i>Moderators: Daniel Dornan &amp; Tamsin Woodman</i>

### What do I do if I need extra support or adjustments?

*Email Daniel or Tamsin and we will try to accommodate your request or connect you with the appropriate people.*

## **Session Description:**

Emerging techniques such as remote sensing have a wide range of applications in agriculture and ecology. This session aims to introduce remote sensing and discuss some of its applications, benefits and limitations within agriculture. We hope students will also gain an understanding of how modelling techniques can be applied to and informed by remote sensing data.

## **Learning outcomes:**

1. Gain an understanding of emerging remote sensing techniques and their wide-reaching applications.
2. Be able to critically review the limitations and benefits of remote sensing applications within a wide range of potential future projects.
3. Explore downstream modelling approaches associated with remote sensing data.

## **Requirements prior to session:**

### ***Journal club:***

Read Weiss, *et al.* (2020) "Remote sensing for agricultural applications: A meta-review" and bullet points talking points to stimulate discussion.

### ***Workshop:***

For the R workshop, students should have access to R with the 'raster' and 'rgdal' packages installed, which can be done using the code below. Students should download the dataset for the practical from <https://ndownloader.figshare.com/files/7446715>.

```
install.packages("raster")
```

```
install.packages("rgdal")
```