



TRUSTEE
training

training on Remote Sensing
for Ecosystem modelling

NEWSLETTER

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FLYING DRONE FOR SCIENCE



Flying drone is fun for everyone and this autumn in the UK the TRUSTEE ESRs had the opportunity to experience it.



The third TRUSTEE technical course focused on drone operation was recently (30 October to 3 September) held at the [Environment and Sustainability Institute \(ESI\)](#), Penryn campus, University of Exeter. The course provided a unique opportunity for the ESRs to learn how drones can be used for ecosystem monitoring. This four-day course was organized by [Dr. Karen Anderson](#) and her colleagues from the ESI, giving a theoretical and practical knowledge-of handling drones for research purposes. The course covered different aspects of drone operations, such as principles of drone flying, electronic components of drone, sensors for research purpose, flight planning, drone data processing etc. During the training, the usage of drones was explained through case studies by [Dr. David Luscombe](#) (Thermal imaging using drone), Davis Walker (Study of Ocean glitter), [Dr. Karen Anderson](#) ('Structure from motion' models using drone images for Beaver impact assessment). [Dr. Alasdair Mac Arthur](#) (Theory of spectral sensor calibration and characterization).

After two days of theory, finally, a day of practice followed! Course participants were taken to the [Woodland Valley Farm](#), where beavers have been introduced to control natural floods. Here, Mr. Chris Jones, the owner of the farm, explained the role of beavers in flood control and impact of the beaver introduction on the ecosystem. The goal of that day was to collect UAV-based data for Structure from Motion analysis of the effect that beaver introduction has had on the vegetation. Taking turns, the researchers played roles of pilot and co-pilot and surveyed the ground control points that would be used for the post-processing of the obtained data.





Mr. Chris Jones (right) explaining to the ESRs the effects that beavers introduction has on the ecosystem.

Beavers were introduced in this ecosystem after some serious floods affecting the closest populations. After some weeks, the effect they have controlling water flows was already seen.

Using UAVs, the ESRs were able to study changes in the vegetation brought about by beavers.

THEMATIC WORKSHOP ON SCIENTIFIC DISSEMINATION

Not everything during that week was about drones. On the final day of the course the ESRs had a chance to learn about the specific features of dissemination to specialists and general public.

The ESRs discussed with [Dr. Stephan Harrison](#) and [Dr. Jon Bennie](#) (both from the University of Exeter) about getting published in academic journals. They had some inspiring words for the students! One of the ESRs, [Dominic Fawcett](#), shared experience of dealing with reviewers comments during the preparation of his first academic paper, published some weeks ago (congratulations, Dominic!). Finally, Mrs. Kerra Maddern, from the Press office of the University of Exeter talked with the researchers about how to deal with the press and radio interviews and take part in various non-academic communications.



The ESRs and some of the people involved in the course.

NEWS

- We are proud to introduce to you three new ESRs: Vicente Burchard-Levine, Anton Evdokimov and Hafiz Ali Imran. At the moment all 12 ESRs have been hired and the project is gaining momentum.
- The new partner organisations have also joined us since June: Institute of Agrifood Research and Technology (IRTA, Spain), University of Trento (Italy) and non-academic partner - SAL engineering (Canada).
- Do you remember Orfeo ToolBox - the image processing tool which we were using during the training courses in Milan? The new [version 6.2.0](#) is now released.

NEXT COURSE

Next training course will be held in Majadas del Tietar, Spain, during next 11-18th March 2018. The ESRs will have a whole week of fieldwork to collect data of every kind, from leaf measurements to a hyperspectral aerial overpass.

SOMETHING TO READ

- Dominic Fawcett's first [scientific paper](#)
- [OCO-2](#) advances photosynthesis observation from space via solar-induced chlorophyll fluorescence

DATES FOR YOUR DIARY

- [The Wavelength Conference](#)
- [Congress of the European Vegetation Survey](#)



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