



Enhancing Fieldwork Learning Showcase

Wednesday 14th and Thursday 15th September 2022

At The Open University and streamed online

Abstracts Booklet



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Contents

Programme Day One: Wednesday 14 th September	4
Programme Day Two: Thursday 15 th September	6
Day 1	7
Keynote 1 – Principles for undergraduate fieldwork - can they guide us in creating sustainable fieldwork learning opportunities?	7
Presentations – Session 1: Sustainability	8
Sustainability Issues in Ecological Surveys	9
Keep Off the Grass! A Tool for Accessing Vulnerable Ecosystems	10
Minibus, Coaches, Trains and Planes: Embedding Sustainable Fieldwork Travel	11
Presentations – Session 2: Student Voice	12
Empowering Student Voice Through Co-designed Digitally Enhanced Inclusive Fieldwork Approaches	13
Co-creation of a Life Sciences Allotment	14
Demonstration 1 – Virtual Reality and Fieldwork	15
Demonstration 2 - Image metadata and its importance in data interpretation, preservation, curation and use	16
Keynote 2 – Developing institution-level field work guidance: insights from the University of Southampton	17
Presentations – Session 3: Post-pandemic fieldwork	18
An Initial Exploration of Post-Pandemic Fieldwork Challenges and Opportunities	19
Digital Tools for Fieldwork Accessibility and Sustainability; An Unexpected Journey from COVID 'Fix' to Student Co-creation of Virtual Fieldtrips	20
Back to Field Courses – Back to Normal?	21
Presentations – Session 4: Equality, Diversity and Inclusion	22
Game On ... Beyond VFTs!	23
High Resolution Virtual Geological Outcrops for Teaching and Learning	24
GeoSPACE: Developing a Flexible Fieldwork Format Combining In-person and Remote Participation	25
Day 2	26
Keynote 3 - Designing inclusive digital pedagogies to support secondary school fieldwork: experiences of the Field Studies Council	26
Presentations – Session 5: Sustainability	27
Post-covid ecology fieldwork survey	28
Teaching environmental science students in the UK using mobile device captured current data by Malawian macadamia nut farmers	29
Resequencing GCSE Science to make Ecology meaningful through fieldwork	30





Demonstration – Video Streaming Technologies for Remote Access to Fieldwork.....	31
Presentations – Session 6: Equality, Diversity and Inclusion / Sustainability.....	32
No Fieldwork Fieldwork.....	33
Covid-19 and the missed pre-university fieldwork learning opportunities for our next generation of geographers.....	34
Apps for accessibility	35

Programme Day One: Wednesday 14th September

Time	Theme / title	Presenters
9:30 to 10:00	REGISTRATION / Tea and Coffee	
10:00 to 10:05	Welcome – OU: Julia Cooke & EFL: Derek France	
10:05 to 10:45	Keynote 1. Principles for undergraduate fieldwork - can they guide us in creating sustainable fieldwork learning opportunities?	Helen Walkington Oxford Brookes University
10:45 to 11:25	Session 1. Sustainability 1 – Chaired by Derek France	
	Sustainability Issues in Ecological Surveys	Debbie Bartlett University of Greenwich
	Keep Off the Grass! A Tool for Accessing Vulnerable Ecosystems	Liz Hamilton University of Birmingham
	Minibus, Coaches, Trains and Planes: Embedding Sustainable Fieldwork Travel	Tamara Hunt University of Chester
	Questions from Session 1	
11:25 to 11:45	BREAK – Tea and Coffee	
11:45 to 12:15	Session 2. Student Voice – Chaired by Julia Cooke	
	Empowering Student Voice Through Co-designed Digitally Enhanced Inclusive Fieldwork Approaches	Janine Maddison Newcastle University
	Co-creation of a Life Sciences Allotment	Andy Wakefield University of Bristol
	Questions from Session 2	
12:15 to 12:35	Demonstration – Virtual Reality and Fieldwork	Katharine Welsh University of Chester
12:35 to 12:45	Image metadata and its importance in data interpretation, preservation, curation and use	Brian Whalley The University of Sheffield
12:45 to 13:00	Interactive Activities - VR headsets - Local data collection activity	Katharine Welsh David Morgan & Addy Pope ESRI UK
13:00 to 14:00	LUNCH (Sponsored by ESTEEM & The Open University)	
14:00 to 14:45	Keynote 2. Developing institution-level field work guidance: insights from the University of Southampton	Judith Lock and Becky Morris University of Southampton
14:45 to 15:15	Session 3. Post-Pandemic Fieldwork – Chaired by Brian Whalley	
	An Initial Exploration of Post-Pandemic Fieldwork Challenges and Opportunities	Julian Park & EFL team University of Reading
	Digital Tools for Fieldwork Accessibility and Sustainability; An Unexpected Journey from COVID 'Fix' to Student Co-creation of Virtual Fieldtrips	Simon M. Hutchinson University of Salford
	Back to Field Courses – Back to Normal?	Wendy Harris Swansea University
	Questions from Session 3	

15:15 to 15:35	BREAK - Tea and Coffee / Posters	
15:35 to 16:15	Session 4. Equality, Diversity and Inclusion – Chaired by Sarah Davies	
	<i>Game On ... Beyond VFTs!</i>	Lynda Yorke Bangor University
	<i>High Resolution Virtual Geological Outcrops for Teaching and Learning</i>	Anne Jay The Open University
	<i>GeoSPACE: Developing a Flexible Fieldwork Format Combining In-person and Remote Participation</i>	Trevor Collins The Open University
	Questions from Session 4	
16:15 to 17:00	<i>Reflections on the image metadata and lunchtime data collection activity</i>	Brian Whalley, Dave Morgan, Addy Pope
17:00	Close	

6:30pm for 7pm – Conference Dinner ([The Plough in Simpson](#)) Sponsored by ESRI UK

Programme Day Two: Thursday 15th September

Time	Theme / title	Presenters
8:45 to 9:00	REGISTRATION	
9:00 to 9:05	<i>Welcome – Alice Mauchline</i>	
9:05 to 9:35	<i>Keynote 3. Designing inclusive digital pedagogies to support secondary school fieldwork: experiences of the Field Studies Council</i>	<i>Bethan Stagg</i> Field Studies Council
9:35 to 10:15	Session 5. Sustainability 3 – Chaired by Alice Mauchline	
	<i>Post-covid ecology fieldwork survey</i>	<i>Julia Cooke</i> The Open University
	<i>Teaching environmental science students in the UK using mobile device captured current data by Malawian macadamia nut farmers</i>	<i>Jennie Bellamy</i> The Open University
	<i>Resequencing GCSE Science to make Ecology meaningful through fieldwork</i>	<i>Jon Hale</i> Beaulieu Convent School
	Questions from Session 5	
10:15 to 10:55	<i>Demonstration – Video Streaming Technologies for Remote Access to Fieldwork</i>	<i>Trevor Collins</i> The Open University
10:55 to 11:15	BREAK – Tea and Coffee	
11:15 to 11:55	Session 6. Equality, Diversity and Inclusion / Sustainability – Chaired by Trevor Collins	
	<i>No Fieldwork Fieldwork</i>	<i>Sonja Rewhorn</i> The Open University
	<i>Covid-19 and the missed pre-university fieldwork learning opportunities for our next generation of geographers</i>	<i>Vicky Johnson</i> The Open University
	<i>Apps for accessibility</i>	<i>Brian Whalley & Trevor Collins</i>
	Questions from Session 6	
11:55 to 12:15	Discussions – breakout rooms	
12:15 to 13:15	<i>Discussion – Where next for EFL?</i>	<i>Lesley Batty</i> University of Birmingham
13:15 to 13:30	<i>Thank you & closing remarks – OU: Sarah Davies & EFL: Katharine Welsh</i>	
13:30	LUNCH TO GO & CLOSE	

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Day 1

Keynote 1 – Principles for undergraduate fieldwork - can they guide us in creating sustainable fieldwork learning opportunities?

Helen Walkington (Oxford Brookes University)

Themes: Sustainability of fieldwork & Equality, Diversity and Inclusion in fieldwork

Abstract

This keynote will begin by outlining the collective action of a group of departmental heads in Geography from across the UK to create a set of five principles for undergraduate fieldwork in association with the Royal Geographical Society. It will then focus in on Principle 2 – sustainable fieldwork, in order to explore how this concept is being framed. Is the following question enough 'How do we reduce the fieldwork emissions footprint without reducing the quality of the learning experience?'

The presentation will question whether a carbon budget approach is sufficient to integrate all aspects of sustainability in fieldwork, shifting the presentation towards the three pillars of equity, futurity and environment as lenses to extend our thinking about sustainable fieldwork. Conference delegates will be challenged to reflect on how sustainable their existing fieldwork is, and encouraged to share ideas about how it could become more sustainable in the future. The speaker will close by offering her own interpretation of a field-based pedagogy for sustainability in Higher Education based on developing courageous and compassionate approaches to working with students in the field and through research.

Professor Helen Walkington teaches Geography at Oxford Brookes University and carries out research into Higher Education pedagogy. She is an elected member of the Council of the Royal Geographical Society and member of the Expeditions and Fieldwork division.



Presentations – Session 1: Sustainability



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Sustainability Issues in Ecological Surveys

Debbie Bartlett (University of Greenwich)

Theme: Sustainability of fieldwork

Keywords: sustainability; ecological survey

Abstract

CIEEM (the Chartered Institute of Ecology and Environmental Management) has set up a working group to look at sustainability issues in ecological surveys with view to providing guidance on Sustainable Environmental Solutions for the sector. This will be presented in topic sections – for example reptiles and amphibians – and will review the current situation identifying any methods, areas of work or specific items that require the use of unsustainable materials and explore currently available options for more sustainable alternatives. During this process areas where greater investment in research could identify new options are being identified. The final draft is due to be completed and circulated for comments in July with the guidance, which will include case studies, available in early autumn 2022.



Keep Off the Grass! A Tool for Accessing Vulnerable Ecosystems

Liz Hamilton, Lesley Batty & Joe Berry (University of Birmingham)

Themes: Sustainability of fieldwork

Abstract

Field trips have become an important recruitment tool with most universities offering a range of short- and long-haul residential destinations. However, educators are being required to rethink field provision in light of issues including (i) accessibility and inclusivity; (ii) ethical considerations; and (iii) environmental and ecological impact.

Recent developments in online field courses potentially provide more sustainable fieldwork thereby aligning it with initiatives such as the Royal Geographical Society “Principles for Undergraduate Fieldwork” which requires signatories to undertake a carbon audit of fieldwork travel, offer low carbon alternatives and aim to reduce the carbon footprint of trips over time. Inspired by work at the Open University, we will demonstrate a prototype web framework (HEFi field trips online) which aims to provide a uniform experience for students as well as a structure for staff to build their virtual field trips around. This includes field guides, area maps, virtual field activities and the ThingLink 360 tours. It is hoped that the framework will be a shared resource allowing institutions to utilise and contribute to a bank of different field locations.

The field course has been developed for the UK uplands but can be adapted to remote or ecologically sensitive locations. Whilst not a replacement for fieldwork, we propose that these tools can deliver an equitable experience for students, prevent damage to ecologically sensitive areas and reduce carbon footprints. We suggest that they should be used in combination with traditional field trips to broaden student experience whilst meeting ethical considerations.



Minibus, Coaches, Trains and Planes: Embedding Sustainable Fieldwork Travel

Tamara Hunt, Jane Bevan, Ben Huang & Lucas Trawicki (University of Chester)

Themes: Sustainability of fieldwork & Student Voice

Keywords: Carbon reduction, Sustainable fieldwork, Experiential learning, Vehicle emissions, Green skills

Abstract

Creating sustainable futures is dependent on making informed choices. Fieldwork provides an experiential opportunity to explore the environmental implications of travel and encourages students to consider the trade-offs between field experience and environmental impact to inform their own travel choices, now and in their professional futures. Building on previous fieldwork carbon-footprint work, the department had collated a decade of travel data. Adopting the RGS's fieldwork principles, which advocates including carbon audits of fieldwork, offered a fresh perspective to utilise fieldwork to embed sustainability skills within fieldwork practices.

Following the launch of Carbon Literacy Training at the University, an opportunity arose in the department to reduce carbon emissions of fieldwork activity. Collaborating with second year Work-Based Learning (WBL) students the team reviewed and analysed national and international fieldwork travel data. Tasked with reflecting on the implications of travel post-Covid, and to consider opportunities and challenges of rationalising fieldwork provision in light of digital and remote fieldwork.

The team refined detailed data, by using exact vehicle emissions rather than national averages, enabling the identification of passenger thresholds thus creating a transport hierarchy. These thresholds can be used to create a decision tree, supporting and informing fieldwork leaders in the process of choosing the most appropriate and sustainable form of travel.

This work will enable fieldwork learning to continue and develop students' sustainability skills. Fieldwork is a key experience and a decision tree tool will help teams to embed sustainability within fieldwork and justify its continuation, while meeting wider institutional carbon reduction objectives.





Presentations – Session 2: Student Voice





Empowering Student Voice Through Co-designed Digitally Enhanced Inclusive Fieldwork Approaches

Janine Madison (Newcastle University)

Themes: Student voice, Equality, Diversity and Inclusion in fieldwork

Keywords: co-design; inclusive; student voice; focus groups

Abstract

Over the past few years, the delivery of fieldwork has undergone a transformation. Once confined to trailblazers; the Covid-19 pandemic has resulted in widespread rapid adoption of virtual fieldwork; with digital approaches becoming mainstream across Bioscience, Geography, Earth and Environmental Science disciplines.

Whilst the return to in-person fieldwork has been welcomed by staff and students alike, how can the experiences and realised benefits of the virtual world be used in combination to enhance in-person fieldwork?

This presentation will reflect on the methods used to capture student views and experiences of these digital approaches, and how these can be incorporated into the design and delivery of digital fieldwork approaches. Drawing upon the results of a process evaluation which was designed to empower student voice through the testing and reviewing of digital fieldwork approaches, with student feedback being incorporated to develop these approaches further.

These co-designed digital fieldwork approaches are designed to address identified challenges in fieldwork, enhance the overall fieldwork experience and promote inclusive fieldwork practice.





Co-creation of a Life Sciences Allotment

Andy Wakefield, Emily Bell (University of Bristol)

Themes: Sustainability of fieldwork & Student voice & Equality, Diversity and Inclusion in fieldwork

Keywords: Allotment, wellbeing, ecology, co-creation, collaboration, circular economy

Abstract

We have created a community garden on a derelict parcel of land in the heart of the main campus at the University of Bristol (UOB). The plot is used primarily as an allotment allowing staff and students to learn about food production, but it is also used as an outdoor teaching space for ecological field work and tutorials. It provides space on campus for students and staff to relax as well as an additional platform from which students can communicate both UOB ecological research and the benefits that allotments bring for physical and mental health. The project is an example of staff-student collaboration built with sustainability at its core, linking to many of the 17 United Nations Sustainable Development Goals. Future plans include dedicated space for final year students to conduct agricultural/horticultural field experiments.





Demonstration 1 – Virtual Reality and Fieldwork

Katharine Welsh (University of Chester)

Themes: Sustainability of fieldwork

Abstract

Previous work undertaken by Bos et al. (2021) demonstrated that applications of Virtual Reality within education has the potential to enhance fieldwork observation techniques pre-fieldwork, develop student's critical analysis skills, and enhance student employability. As such, our team (two geography academics and five Games Development undergraduate students) have developed a Virtual Reality experience which showcases the challenges of effectively preparing for a flood in a static caravan park. This resource was developed to support undergraduate fieldwork (pre- and post-), to demonstrate the role of VR for effective communication to our postgraduate students, and to use as an outreach tool within a flood-risk community to better educate residents and tourists. Our workshop will explore the process of developing a virtual experience, reflections on staff-student partnerships, practical challenges and tips for developing a VR experience before offering participants an opportunity to experience our Virtual Reality experience using Oculus Quest II headsets.



Demonstration 2 - Image metadata and its importance in data interpretation, preservation, curation and use

Brian Whalley (The University of Sheffield)

Themes: Sustainability of fieldwork

Keywords: images, metadata, FAIR principles, geotagging

Abstract

In an age when 'the visual' is an important everyday occurrence, from influencers to news and forensics it is important that students appreciate metadata. This applies particularly to images in fieldwork but also to the nature of data and its use generally. This paper will outline the nature of metadata in general, why it should be recorded and how. This is part of FAIR principles – findable, accessible, interoperable, reusable for published information. This should apply to student reports and dissertations as well as scientific papers with respect to data in general as well as images.

I shall outline:

- The nature of metadata
 - Exif and IPTC etc
 - Geotagging
 - Locational data, GPS, National Grids, W3W, decimal Latitude Longitude
 - Informative keywords in captions
 - Authorization, privacy, copyright and Creative Commons
 - Image viewers, editors and organizers
-



Keynote 2 – Developing institution-level field work guidance: insights from the University of Southampton

Judith Lock and Becky Morris (University of Southampton)

Themes: Sustainability of fieldwork & Equality, Diversity and Inclusion in fieldwork

Abstract

In June 2020 the University of Southampton set up a working group comprising representatives from disciplines across the university that teach student field classes, from Archaeology to Oceanography. The aim was to share our knowledge about how we could teach student field classes safely during the Covid pandemic. We will discuss how this group was brought together effectively, the positive outcome of sharing knowledge on field teaching across diverse disciplines, and our influence on university planning and policy. As well as establishing guidelines for Covid-safe field activities and residential trips that were shared across the university, the group developed three key documents: 1) Principles for fieldwork, to explain why field teaching underpins a range of disciplines; 2) Code of conduct for those undertaking field trips; and 3) Guidance for staff members to support students with additional needs on university field work. We discuss how these documents were developed collaboratively. Since overseas field trips restarted this year, the working group has broadened its remit beyond Covid. We are now addressing issues including field trip funding, accessibility, and sustainability, where our approaches could be improved and be more consistent across the university. We have found it incredibly helpful to share knowledge and experiences in this working group. It has improved our field work practices and enabled us to have a collective voice that has been heard at university-level forums. It could be really valuable to expand this approach across more institutions, and potentially to develop cross-institution guidance.





Presentations – Session 3: Post-pandemic fieldwork





An Initial Exploration of Post-Pandemic Fieldwork Challenges and Opportunities

*Julian Park, Alice Mauchline (University of Reading), Derek France, Katharine Welsh (University of Chester)
Brian Whalley (The University of Sheffield)*

Themes: Sustainability of fieldwork and Equality, Diversity and Inclusion in fieldwork and Student Voice

Abstract

Building on a range of previous research on the provision of fieldwork in HE curricula and student views of fieldwork, the Enhancing Fieldwork Learning team undertook a snapshot of students' perceptions of fieldwork in Autumn 2021. A short, online survey was circulated to understand which aspects of fieldwork they most value from this part of their learning experience and to evaluate whether their experiences during the pandemic had altered their views on fieldwork provision and delivery. Additional perspectives on inclusive provision and sustainability were explored.

Our respondents felt that whilst the virtual fieldwork alternatives that had been offered during the pandemic had aided learning, there was a strong desire across all disciplines to get back in the field for in-person learning, although some recognised the potential benefits of a blended offering. Nearly half of the sample had felt excluded from fieldwork at some point, some because of disability and many because they could not afford some of the more exotic fieldwork destinations offered as options. In relation to sustainability issues, there were a range of responses with some students suggesting activities should take place as close to campus as possible, whilst others suggested the carbon footprint of a number of relatively small field courses was negligible in the wider context and should not necessarily be considered.

This suggests that any shift to the use of virtual fieldwork as a more permanent option for student learning needs careful consideration and further work on the sustainability of fieldwork provision is needed.



Digital Tools for Fieldwork Accessibility and Sustainability; An Unexpected Journey from COVID 'Fix' to Student Co-creation of Virtual Fieldtrips

Simon Hutchinson & Amy Evans (University of Salford)

Themes: Sustainability of fieldwork & Equality, Diversity and Inclusion in fieldwork

Abstract

Fieldwork is often seen as 'key' to environmental disciplines. But, when COVID-19 restricted these activities, there was a rapid shift to online alternatives. Post pandemic, some methods of visualising field-based activities have remained as their potential benefits for enhancing, not only inclusion and accessibility in environmental education, but also the 'value for money' and the sustainability of fieldwork have been recognised. However, as these digital tools were introduced in extremis, our understanding of students' engagement with these approaches remains unclear.

We assessed the use of virtual field trips (VFTs) at both UG and PGT levels to evaluate students' learning experiences through virtual fieldwork. Moreover, we have facilitated the student co-creation of VFTs using a range of accessible technologies. Exploring both how students engaged with the technology and how this supported Learning Outcomes provides an important benchmark for the future application of digital tools. Staff have also been supported in the creation of virtual environment versions of additional off-campus activities.

Overall, the attitudes of students to virtual rather than in-person fieldwork have changed since 2020. However, feedback indicates the efficacy of pre and post field trip support via VFTs. Student co-creation was positively received and increased student engagement but had some surprising results in terms of attitudes to technology. Field-based activities across the environmental sciences can have significant resource implications. Our findings indicate that digital tools can enhance the accessibility of fieldwork and the student experience. They could also have a role in the sustainability of this element of environmental education.



Back to Field Courses – Back to Normal?

Wendy Harris, Penny Neyland, Aisling Devine, Laura Roberts (Swansea University)

Themes: Sustainability of fieldwork

Keywords: Overseas field courses, environment and sustainability, transferable skills, employability

Abstract

The importance of field courses to embed learning, motivate students and develop key employability skills is well established. Field courses taking place overseas and in novel environments can be an important recruitment tool and may have the benefit of introducing students to a range of field techniques not available in the UK. Students may also experience greater learning gains following an overseas field course, and this experience may also enthuse and inspire them in their learning. International field courses tend to be optional but, as they often require a financial contribution from the student, may be considered less inclusive. Overseas field courses may also fail to equip students for working in the UK, leaving gaps in species identification and habitat recognition that may be key for future employment in the biology and ecology sector.

For educators, challenges in running UK-based field courses, such as staff time, health and safety policy and ensuring inclusivity, are increased for overseas field courses. Additionally, in the few years during which field courses have been suspended due to Covid, awareness of the environmental costs of overseas field courses is more apparent among both staff and students. These factors raise a number of questions for us. Do students still want overseas field courses? Should we as educators still be promoting overseas travel? Do UK and overseas field courses offer equitable academic and transferable skills? Is there value in promoting overseas field courses or should we be looking closer to home?



Presentations – Session 4: Equality, Diversity and Inclusion



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Game On ... Beyond VFTs!

Lynda Yorke and Rufina Kaloyanova (Bangor University)

Themes: Equality, Diversity and Inclusion in fieldwork

Keywords: gamification, inclusion, fieldwork, interactive

Abstract

Virtual field trips (VFTs) appear to be the go-to solution for both accessibility and inclusion. However, fundamentally engaging students in fieldwork has been about the practice of collecting data, the ability to learn new techniques, and the idea of challenge-based learning. Ensuring that interactive technology can support the students' learning needs is the first step in the creation of the VFTs. As a type of mediated learning experience, the VFTs fall into the e-learning category of resources, which can be roughly divided into passive and active. While a traditional video-format resource requires little engagement from the viewer and puts them in the position of a passive observer, the VFTs we developed were interactive as they employ a variety of video game mechanics (branching, hotspots, buttons, etc). With the help of gamification strategies, the VFTs become a learning experience that requires user participation to move forward. Using VFTs is advantageous as it allows for the incorporation of passive e-learning materials such as PTCs and GVs with active ones such as quizzes, 360 videos/images, etc. This can facilitate learning as it presents the passive and active aspects of field trip learning into one coherent e-resource. Creating such VFTs comes with the challenge of mitigating creative, software, and media equipment costs. Because the technology of interactive videos is quite novel outside the area of video games, these costs can pose some limitations on what is currently possible and practicable for VFT creation.



High Resolution Virtual Geological Outcrops for Teaching and Learning

Anne Jay, Robert Barnes, Marcus Badger (The Open University)

Themes: Equality, Diversity and Inclusion in fieldwork

Keywords: geology, 3D, Virtual outcrops, high resolution

Abstract

Equitable access to field learning is vital if we want to increase inclusivity and diversity in environmental sciences. For the geological sciences this requires access to geological outcrops. However, accessing rocks in the field can be impossible or difficult for many due to cost, health and time commitments amongst others. One way to alleviate some of these barriers is to provide virtual field experiences.

In the last decade there have been huge leaps forward in the acquisition and production of virtual geological outcrops. Mostly facilitated by drones these show gross structure of an outcrop well. However, students new to the geosciences need the opportunity to observe rocks from landscape to hand specimen giving them the opportunity to discover the lithology of rocks and associate this with the larger geological features.

Using structure from motion we have created a 3D outcrop of a section (5 m by 50 m) of the Friars Point unconformity in Barry, South Wales. The geology of this outcrop is a classic introductory site and features challenging (for 3D capture) topography alongside spectacular centimetre to decimetre scale geology.

Here we present that model, along with lessons learnt for the capture and use of high spatial resolution 3D models using off-the-shelf and on-the-ground techniques.



GeoSPACE: Developing a Flexible Fieldwork Format Combining In-person and Remote Participation

Trevor Collins (The Open University) Anita Marshall (University of Florida)

Themes: Equality, Diversity and Inclusion in fieldwork

Keywords: Inclusion, accessibility, flexible learning

Abstract

The GeoSPACE project (funded by the US National Science Foundation) is seeking to create accessible and inclusive field courses by developing a flexible format that combines in-person and online participation. Rather than viewing online participation as inherently deficient, we are exploring ways in which asynchronous and synchronous tools can be used to support collaboration and communication between students in each setting.

In this short presentation, we will share the findings from a two-week field course in Arizona, which involved 17 students from across the United States (one male and 16 female). Fourteen of the students attended in-person and three participated online, and over half of the students declared a disability (i.e., 9/17). The students were supported by lecturers online and in the field. During the course Discord and Google Drive were used to support asynchronous communication and Zoom and YouTube Live supported synchronous communication.

As the course concluded, we undertook a student focus group to capture the students' reflections on their field course experience. These were analysed alongside examples of the students' work and our observations. Our initial analysis indicates that by adopting roles and structuring tasks to accommodate differences in the students' time zones and working patterns, the students collaborated productively and benefited from the differences in their subject knowledge and fieldwork experience.

As well as presenting our findings, we will discuss the implications for developing more flexible learning approaches to fieldwork education and outline our plans for a subsequent field course next year.



Day 2

Keynote 3 - Designing inclusive digital pedagogies to support secondary school fieldwork: experiences of the Field Studies Council

Bethan Stagg (Field Studies Council)

Themes: Sustainability of fieldwork & Equality, Diversity and Inclusion in fieldwork

Abstract

Like many learning institutions, the Field Studies Council had to make a rapid transition from in-person learning to online in 2020, with the additional challenge of being an outdoor education provider. The organisation delivered a programme of live-streamed lessons and pre-recorded lectures for secondary schools, presented by centre tutors from field localities. Centre fieldwork was substituted with investigations that students could undertake in back gardens or local parks, virtual data collection using imagery from real field sites, and analysis of existing datasets. The programme included webinars for teachers, to enable them to support students with the novel forms of fieldwork. This talk evaluates the digitally-based fieldwork alternatives developed during the pandemic and the blended learning approaches that the organisation has adopted since, to promote inclusive fieldwork and support learners' skills development.

Presentations – Session 5: Sustainability



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Post-covid ecology fieldwork survey

Julia Cooke (The Open University)

Themes: Sustainability of fieldwork

Abstract

We consider that it is important to record and explore how the Covid-19 pandemic has changed the way we teach ecology and what we learned in the process. By collecting and collating information from many HE/university educators, we aim to identify commonalities among responses and share best practice.

We are currently conducting a survey asking ecology teachers what they did before, during and after the main pandemic restrictions in relation to different aspects of teaching (lectures, practicals, fieldwork, pastoral care etc) and asking the main challenges and triumphs. We will introduce this work and invite participants to complete the survey.





Teaching environmental science students in the UK using mobile device captured current data by Malawian macadamia nut farmers

Jennie Bellamy, Yoseph Araya, Will Rawes, Emmanuel Junior Zuza, Andrew Emmott (The Open University)

Themes: Sustainability of fieldwork & Equality, Diversity and Inclusion in fieldwork

Keywords: macadamia, mobile device data, distance education, Sustainable Development Goals

Abstract

Ensuring food security is one of the UN's primary Sustainable Development Goals. Achieving it would require innovative agricultural practices supported by evidence-based, data-driven research. One such approach common in sub-Saharan Africa is agroforestry, a farming system where trees are grown alongside crops – thereby supporting the growth of the crop and diversifying produce. In this context, macadamia is an important tree crop in Malawi, both for income generation and as a supplement to maize-based diet. However, yields from macadamia clones are still low especially at smallholder farmer level. Understanding factors influencing macadamia yields is vital in order to improve them. Collecting data at smallholder level is essential to obtain accurate and relevant information to assist farmers in making informed decisions about the clones they grow and management practices. Neno Macadamia Trust and Highlands Macadamia Cooperative Limited have empowered Lead Farmers to become enumerators to collect the clone data using mobile phones. Farmers are encouraged to own the research and see its benefits. Additionally, the data provides UK environmental science undergraduate students, current data to reinforce their food security learning. They use farming data, environmental and social factors to undertake an array of investigations, with a view to supporting farmer/management decision-making. Moreover, this exercise brings students in the wealthy North, to appreciate and create direct contact, through first-hand data, with the less well-off South and their pertinent global challenges. We report successes and challenges from 4 survey and teaching seasons in engaging farmers, technology in the field and teaching students.





Resequencing GCSE Science to make Ecology meaningful through fieldwork

Jon Hale (Beaulieu Convent School)

Themes: Sustainability of fieldwork

Keywords: AQA GCSE, Fieldwork, Curriculum sequencing, Mathematical skills

Abstract

In 2020 we identified that students studying the Combined Science GCSE were underperforming within the Ecology topics during examinations. To address this, we have resequenced our GCSE course, frontloading Ecology and developing more meaningful ecological fieldwork activities that build knowledge of procedures and the phenomena in small increments utilising our school site. Analysing the first cohort through this reimagined sequenced has shown improved knowledge across the entire cohort against pre-2019 groups despite the comparisons between 13/14 year olds with their 16 year old counterparts. We will share our sequence and narrative that may provide sustainable on-site options for some urban schools beyond counting daisies.



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Demonstration – Video Streaming Technologies for Remote Access to Fieldwork

Trevor Collins (The Open University), Anita Marshall (University of Florida)

Themes: Equality, Diversity and Inclusion in fieldwork

Keywords: Inclusion, accessibility, remote access, webcasting, Discord

URLs:

- GeoSPACE - <https://sites.google.com/ufl.edu/geospace-field-program>
- Fieldcast blog post - <https://besteachingandlearning.wordpress.com/2018/04/01/flipping-fieldwork-at-a-distance/>
- Tarnwatch blog post - <https://besteachingandlearning.wordpress.com/2019/08/06/you-tube-live-from-the-field-enabling-students-to-share-their-experiences-of-fieldwork/>
- Fieldwork Live - <https://encounteredu.com/live-lessons/fsc-fieldworklive-2020>
- NDI Tools - <https://www.ndi.tv/tools/>
- NDI HX Camera App - <https://www.ndi.tv/products/ndi-hx-camera-app/>
- Open Broadcaster Software (OBS) Studio - <https://obsproject.com/>
- YouTube Live - <https://support.google.com/youtube/answer/2474026>

Abstract

In this demonstration, we'll show how synchronous video streaming has been used in the GeoSPACE project to support collaboration between online and in-field students. In June 2022, 17 students from across the United States participated in a two-week geology field course, visiting a series of volcanic field sites in Arizona. Fourteen of the students attended in-person (seven of whom declared a disability) and three participated online (two of whom declared a disability). The students were supported by lecturers online and in the field. This work built on the idea that field courses can, and should, be accessible and inclusive; and seeks to develop a flexible format combining in-person and remote collaborative participation.

During our field course, Discord and Google Drive were used to support asynchronous communication and file sharing among the group. Synchronous video streaming over a local WIFI network was used in the field to provide remote access to inaccessible field sites for the in-person students; and video conference calls (i.e., Zoom) and web broadcasts (i.e., YouTube Live) were used to provide online access to the field site for students at a distance. In this demonstration, we will focus on the technology options for streaming video through a local network and online, and the affordances and limitations of each approach.

Presentations – Session 6: Equality, Diversity and Inclusion / Sustainability



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No Fieldwork Fieldwork

Sonja Rewhorn (The Open University)

Themes: Equality, Diversity and Inclusion in fieldwork

Keywords: Online fieldwork distance education

Abstract

Fieldwork aims to be experiential, which is traditionally achieved through students spending time in situ, as they undertake fieldwork. At site learning was halted during the Covid-19 pandemic. However, even before Covid-19 restrictions, not all students would regularly access field sites as part of their Geography degree. One such example, are those students undertaking a distant education Geography degree, which includes students in secure environments. These distance education students undertake fieldwork from their home (or prison), in other words, no fieldwork fieldwork. Within one example of a distance education Geography degree, students at level 5 explore elements of fieldwork either using pre-collected data, such as interviews of those affected by wildfires in Greece or through their own data collection of archival of a place of their choice. The students then analyse the data through structured web based activities. At level 6, a similar approach is adopted, through either pre-collected data or through a dissertation module where students collect secondary data on an everyday geography from their own home. This portfolio of no fieldwork fieldwork, as well as pragmatically ensuring distant education Geography degree students including prison students can still develop fieldwork skills; the approach also means students who normally cannot partake in traditional in situ fieldwork have an opportunity to develop relevant experiential skills. This short presentation shares examples of the no fieldwork fieldwork delivered through a website in two level 5 modules and how this enables students learning through distance education, including prison students, to develop their fieldwork experience through no fieldwork fieldwork.





Covid-19 and the missed pre-university fieldwork learning opportunities for our next generation of geographers

Vicky Johnson (The Open University)

Themes: Sustainability of fieldwork & Equality, Diversity and Inclusion in fieldwork

Keywords: 14-18 years, Covid impact, online fieldwork pre-university

Abstract

Prior to their undergraduate studies those who study GCSE and/or A-level geography have completed fieldwork based around a cycle of enquiry. Until 2020 and Covid-19 this was very much seen as an 'outside the classroom' activity supporting students with both qualitative and quantitative skills. This means that students arriving for their undergraduate geography qualification had already experienced 'real world' fieldwork in relation to both human and physical geography.

The 14-18-year-old fieldwork experience changed for the Covid-19 cohorts of candidates who were entered for GCSE and A-levels in 2020 and 2021 series. Some managed to cover elements of fieldwork prior to the lockdowns, a few completed a substantial amount via far more independent study than usual, but others missed out totally. However, this situation of unexpected change did provide the 14-18 education sector with an opportunity to consider more online and virtual fieldwork.

The online and virtual fieldwork approach was already in place in some HEIs before Covid-19. Many others also developed significant online and virtual materials to support geography students in fieldwork education during the Covid-19 pandemic.

This presentation will consider the missed fieldwork learning for the Covid-19 student cohort and the potentially more positive shift as the 14-18 education move to considering more online and virtual fieldwork opportunities for the next generation of geography undergraduates.





Apps for accessibility

Brian Whalley (The University of Sheffield) & Trevor Collins (The Open University)

Themes: Equality, Diversity and Inclusion in fieldwork

