

7 Identifying barriers to participation in fieldwork for the ecological and environmental sciences

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Abstract

There is a growing demand for graduates with environmental and/or ecological knowledge. Those pursuing careers in these disciplines are required to demonstrate practical skills and even achieve professional accreditation for those skills. Consequently, the need for undergraduates in many biological disciplines to gain practical and field experience is increasing. However, participation in fieldwork, as well as outdoor activities more generally, varies among students depending on social, economic, and cultural factors, as well as level of physical ability. By conducting a systematic review of the literature across disciplines, I aim to identify factors associated with underrepresentation and barriers to participation in field courses, considering how this might apply to ecological and environmental fieldwork. Results revealed nine factors associated with underrepresentation on field courses, with race and ethnicity being the most frequently reported, and gender, income, exposure and physical ability also prominent. Barriers were diverse but many related to issues associated with identity and what it means to be a fieldworker. Eliminating barriers to participation in fieldwork requires action at all stages including the way University prospectuses are designed, the application process, and the running of field courses.

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1. Introduction

There is a growing demand for graduates with environmental knowledge, alongside a requirement to demonstrate practical skills. As job markets and graduate studentships become increasingly competitive, increasing emphasis is placed on a demonstrated commitment to science and a skill set that can often only be achieved through practical experience (Dacre and Sewell, 2007). However, growing discourse around widening participation in Science, Technology, Engineering and Mathematics (STEM) more generally has highlighted pervasive inequalities that act as barriers to participation from a diverse student body. The potential for such barriers to limit participation in fieldwork has long been acknowledged in geological sciences and in ecological fieldwork in the US. With ecological field experience an increasing necessity for graduate positions in the UK, identifying underrepresented groups in ecological fieldwork and barriers to their participation is essential to ensuring equality of opportunity and a diverse workforce in ecology.

Field Courses are an essential component of many undergraduate degree programs in ecology, evolutionary biology, and environmental science. In our rapidly changing world, students must be able to critically evaluate the biological outcomes of environmental change, and field experiences often force students to re-evaluate their assumptions about how the world works (Fleischner et al., 2017). The importance of fieldwork in Environmental Sciences is highlighted by The Quality Assurance Agency for Higher Education:

'It is impossible for students to develop a satisfactory understanding of [Earth & Environmental Sciences] without significant exposure to field-based learning and teaching and the related assessment. The integration of fieldwork with other learning methods is core to achieving skills such as the ability to visualise and extrapolate data in three dimensions or understanding the application of practical methodologies. Much of the advancement in knowledge and understanding in these subject

areas is founded on accurate observation and recording in the field. Developing field-related practical and research skills is therefore essential for students wishing to pursue careers in [Earth & Environmental Sciences]. Field-based studies allow students to develop and enhance many of the generic skills (for example, team working, problem-solving, self-management and interpersonal relationships) which are of value to the world of work and active citizenship.' (Quality Assurance Agency, 2019).

Field experiences also benefit students who do not need to demonstrate practical skills. From a pedagogical perspective, field courses facilitate experiential learning to promote and deepen learning fundamental concepts (Elkins and Elkins, 2007; Fleischner et al., 2017) and the hidden curriculum (Bergenhengouwen, 1987), improve cognitive learning and recall during exams (Easton and Gilburn, 2012), and reduce achievement gaps among underrepresented minorities (Beltran et al., 2020). Field experiences also improve other transferable skills that enhance employability (Peacock and Bacon, 2018), such as self-sufficiency (Beltran et al., 2020), problem-solving, teamwork, and confidence (Peacock and Bacon, 2018). By positively influencing students' perceptions of science and their self-identity as a scientist (Carlone and Johnson, 2007), field courses can improve understanding of career opportunities (Stake and Mares, 2005) and retention in science.

However, fieldwork is also problematic. Historically, the idea of biological and geological exploration has close ties to colonisation. Field courses can perpetuate colonial practices (Bhakta et al., 2015) to render spaces not only hostile but traumatic (Goodrid, 2018). A general lack of portrayal of underrepresented minority groups in outdoor spaces more generally (Kinsman, 1995), along with feeling actively excluded, can limit a connection to the outdoors that may be necessary to feel driven to explore it. Field courses and fieldwork often require considerable time and expenditure that may be prohibitive for many. A recent study of participants in field courses at the University of California, Santa Cruz, revealed that underrepresented minorities (URM), students from low-income backgrounds and first-generation students were significantly less likely (on average 6, 9 and 12%, respectively) to

participate in field courses than their peers (Beltran et al., 2020). Consequently, understanding potential barriers to participation in biological fieldwork is not only a necessary step towards more inclusive teaching practice, but also towards addressing growing recognition of the need to decolonize research practice (Goddard-Durant et al., 2021) and adopt diverse strategies for widening participation and retention in STEM subjects more generally.

This article identifies potential barriers to participation in ecological fieldwork through a systematic review of the literature. Since baseline research in this area is limited, I aim to use knowledge gained from across disciplines and from the use of outdoors spaces within higher education more generally to examine how such knowledge could be applied to ecological fieldwork. Specifically, the review aims to address the following questions:

- 1) What disciplines have examined barriers to participation in fieldwork and in what locations?
- 2) What factors are associated with underrepresentation in field courses?
- 3) What factors are associated with barriers to participation in fieldwork?
- 4) What solutions to removing barriers to participation have been tested or proposed?

2. Methodology

I performed a literature search on barriers to participation in field courses, fieldwork or outdoor recreation. I wanted to keep my search terms as broad as possible to: 1) ensure I captured the full range of literature available; 2) avoid subjectivity due to pre-conceived notions of attributes associated with reduced participation in fieldwork or in barriers to that participation; and hence 3) capture as diverse perspectives as possible. Consequently, I did not restrict my search in terms of the subject, discipline, or barrier, and included search terms relating to the outdoors more generally. I accessed ISI Web of Science on 10th March 2022, using the following search terms:

fieldwork OR *fieldtrip** OR '*field education*' OR '*field experience*' OR
*outdoor**
AND

*barrier**

AND

participat OR enjoy* OR safe* OR inclu**

I did not restrict the timespan of the search so that the timespan involved/period covered is 1900 – 2022. However, I note that Web of Science is not exhaustive and is focused on English language manuscripts in ISI recognised journals that are digitally available. There are likely many useful sources available in the grey literature that, given more time, I would add to my review. Additionally, the use of 'barrier' in my search terms did mean I missed some papers that were framed around inclusion rather than exclusion, but I considered this necessary to reduce the number of non-relevant papers I retrieved, given time constraints.

My search yielded 3766 papers. I performed an initial screening of titles for relevance, which led to the early exclusion of most papers. An overview of the literature search process, including exclusion criteria, is summarised in Figure 1 following methods described by Moher et al. (2010). Following an initial title screening, I screened abstracts and, where paper relevance was still unclear, full texts. This screening stage led to the exclusion of a further 14 papers. Common reasons for exclusion included: 1) the paper referred to clinical fieldwork in nursing or social care whereby fieldwork involved work experience in nursing or care homes; 2) the paper focused on barriers to outdoor recreation unlikely to be experienced by an undergraduate, for example the availability of green space in urban centres, old age, or age-related disease (old age or early childhood); 3) the paper focused on barriers to primary or secondary school educators incorporating outdoor play or learning experiences into their teaching; 4) the paper focused on administrative barriers to fieldwork.

Only 22 papers were used for final data collection. While screening and extracting data from papers, I encountered additional, relevant papers but did not include these papers in my systematic review due to time constraints (though many are referenced in the text).

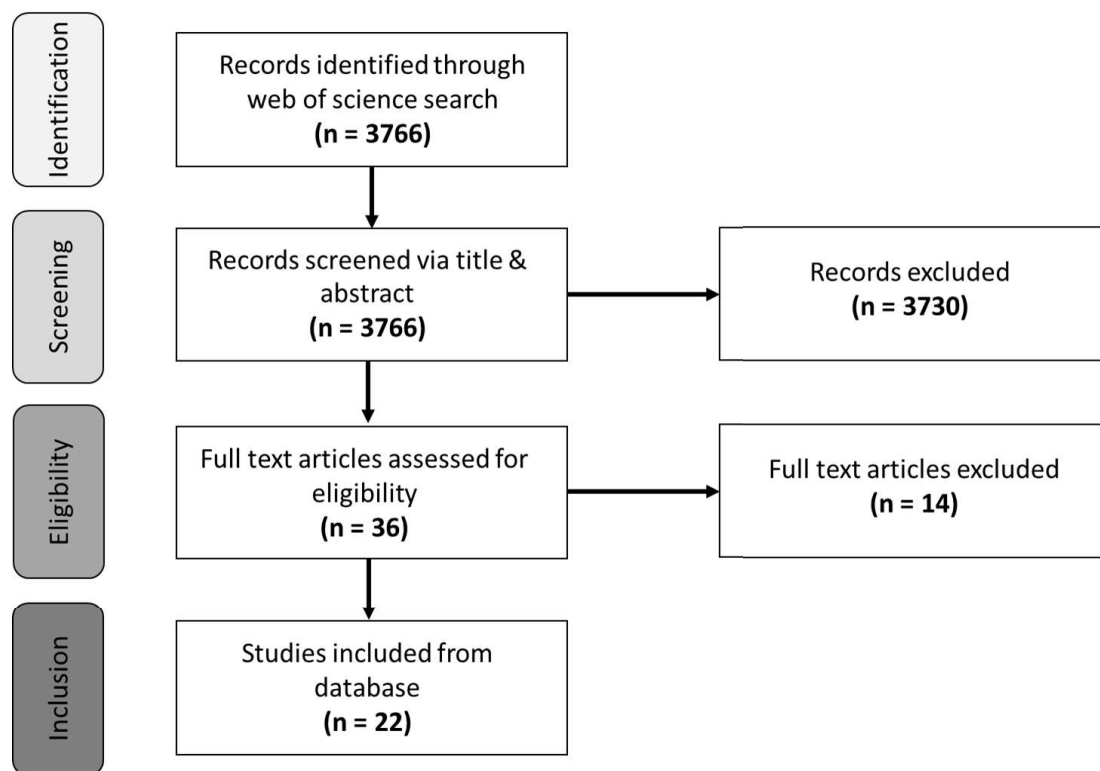


Figure 1: PRISMA statement summarising the number of records excluded at each stage of the literature review process.

2.1 Data extraction

From each paper, I extracted the following, easily extractable or classifiable information: lead author name, year of publication, country or region of study, the discipline (with 'outdoor recreation' used as a catch all for anything related to the outdoors but not an academic subject) and the type of study (e.g. survey, literature review, opinion piece). Information that was harder to classify included factors associated with underrepresentation in field courses, barriers to participation, and solutions to removing barriers to participation and promoting inclusivity.

The factors associated with underrepresentation in field courses were largely analogous to those widely recognised to be associated with underrepresented minority groups (where underrepresented minority group refers to any populations that occur in disproportionately low numbers within science or outdoor recreation). However, I wanted to avoid as far as possible my own preconceived notions of what might constitute a URM in science and outdoor

recreation, and instead be guided by the literature. Nonetheless, due to the necessity of simplifying paper content for the purposes of generating meaningful summaries, the factors I recorded, as well as in my categorisation of barriers and solutions, are oversimplifications that do not reflect the spectrum of experiences and backgrounds that underpin barriers to inclusion.

3. Results

Of the 22 papers included in this review, 18 were published between 2019 – 2022. Just over half of the papers involved the collection of data (Table 1) through either the use of university and course enrolment data, structured interviews, surveys, or a combination of those. The remaining 10 papers included a literature review, anecdotal reports of workshops or panel discussion, and opinion pieces.

Table 1: Types of information included in the 13 papers involved primary data collection.

Type of information	No. of papers
Enrolment data	1
Interviews	1
Survey	8
Survey and interviews	3

Table 2: Types of the 10 papers which did not involve primary data collection.

Type of information	No. of papers
Literature review	1
Opinion	6
Report	3

3.1 What disciplines have examined barriers to participation in fieldwork and in what locations?

Nine academic disciplines were covered by the literature, with three papers covering barriers to participation in outdoor recreation. Papers more frequently

focused on ecology than other disciplines (Figure 2). However, these papers all originated from and were based in the United States. Papers examining barriers to participation in Earth Science, Environmental Science, Geography and Geology were more often focused in the UK, with only one paper in each category focused in the US. Only five of 22 papers focused on countries/regions other than the UK or US, though two of these (those in Polar science) were written by authors in those countries.

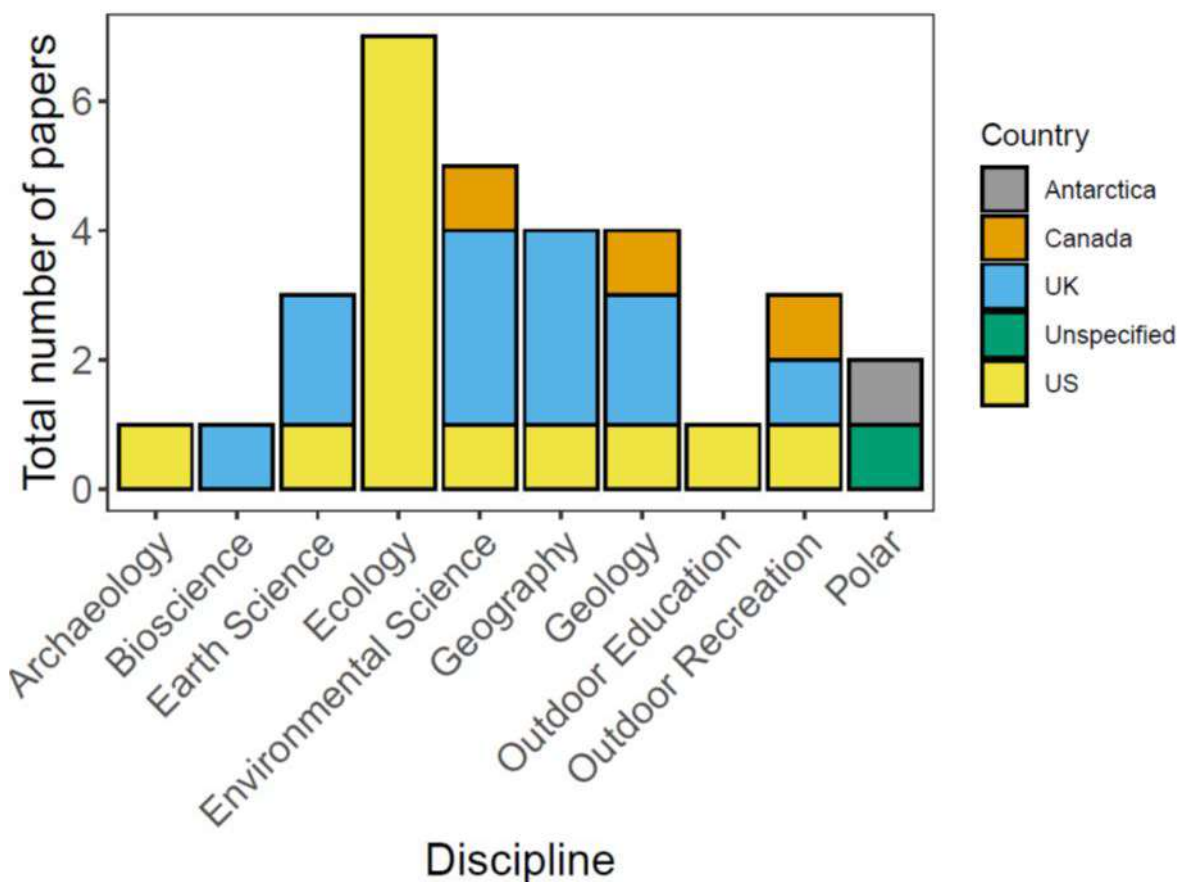


Figure 2: Disciplines covered by the papers included in this review and the number of papers that considered each discipline. Colours represent the focal country or region.

3.2 What factors are associated with underrepresentation in field courses?

Nine factors were associated with underrepresentation in field courses, fieldwork or outdoor recreation (Figure 3). Two papers did not specify any factors associated with underrepresentation but focused only on measures to promote inclusion. Of the factors associated with underrepresentation, race and ethnicity formed the overwhelming majority (Figure 3), mentioned in more

than half of the papers reviewed. Racial or ethnic groups recorded as disproportionately unrepresented included Latino, African-American and indigenous North American groups, reflecting the prevalence of US-based research in the papers reviewed.

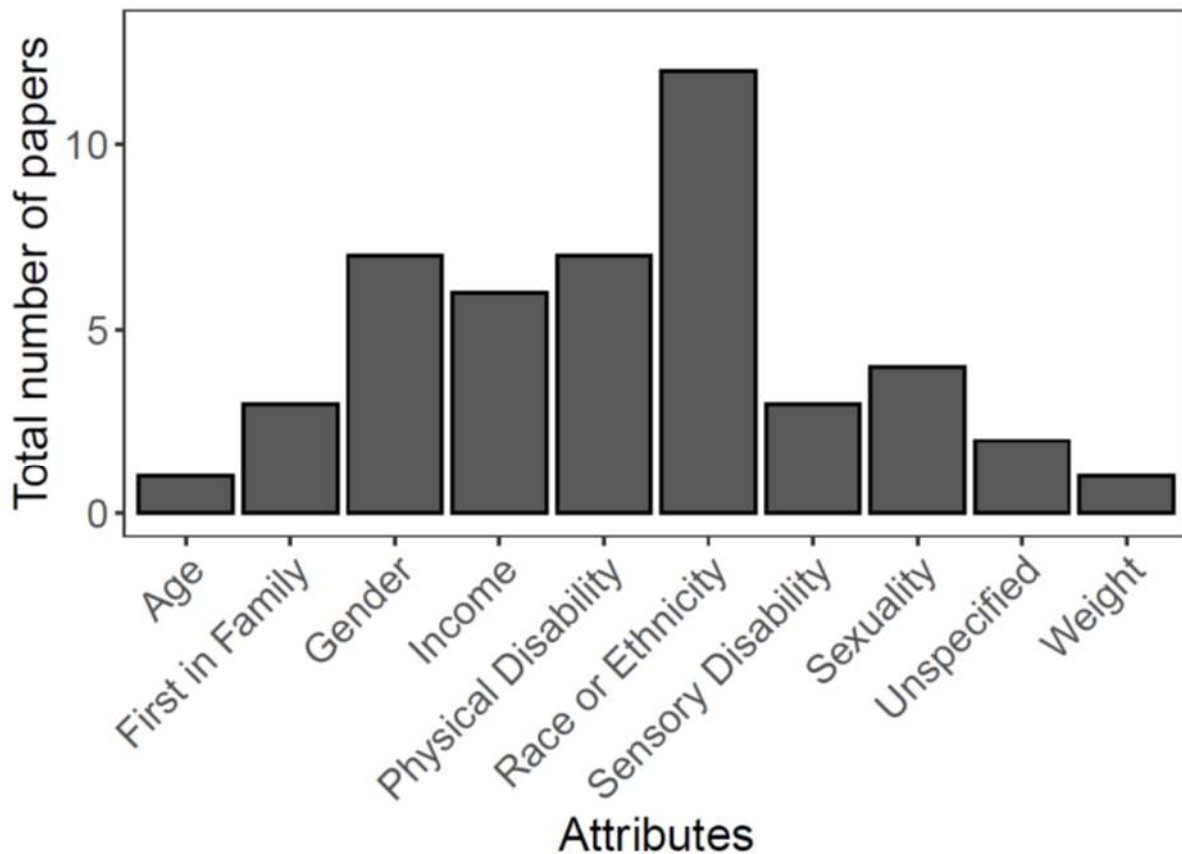


Figure 3: The number of papers reporting factors linked to underrepresentation in field courses, fieldwork or outdoor recreation.

Gender, income, and disability were also frequently highlighted as associated with underrepresentation. When gender was mentioned, it was always in reference to females, while income was always in reference to students from low-income backgrounds. Attributes were often interrelated. Weight was only listed in one paper on barriers to outdoor recreation and was presented in the context of overweight people feeling excluded from or unwelcome in the outdoors.

3.3 What factors are associated with barriers to participation in fieldwork?

I classified barriers to participation in field courses, fieldwork or the outdoors into eleven categories (Table 2), though note that: 1) it was difficult to assign many barriers to a single category; and 2) several barriers regularly co-occurred. More than half of the papers referred to ideas around personal identity as a barrier to participation, with financial constraints, accessibility, prior exposure and/or experience and family circumstances also featuring prominently (Figure 4).

Table 3: Barriers to inclusion highlighted by the 22 papers covered in this literature review, and a description of their meaning.

Barrier	Description
Accessibility	The accessibility of field sites in terms of both distance from home and from transport options, also the terrain involved.
Culture of the activity	Cultural aspects of the activity such as group living, drinking alcohol, the food involved.
Equipment	Access to or affordability of specialist equipment required. Includes field clothing as well as scuba equipment. Also includes availability of gender appropriate equipment such as properly fitting field clothing and sanitary supplies for women.
Experience	Previous experience of fieldwork and/or science. Student perception that high grades in a subject were needed was also highlighted.
Exposure	Previous exposure, through home or school life, to nature, the outdoors or fieldwork.
Family Circumstances	Includes family caring responsibilities as well as the presence or absence of family support for field-based activities. Cultural norms may underlie family support in some circumstances, intersecting with identity.
Financial	The cost of paying for field trips as well as costs incurred due to lost income.
Harassment	Gender, sexuality, race or ethnicity-based violence.
Identity	Includes multiple ideas around a sense of belonging to a group or outdoor culture, identifying as a scientist or field scientist,

Barrier	Description
	issues around the association of fieldwork (and hence desire to dissociate) with colonialism.
Timing	Timing of fieldwork.

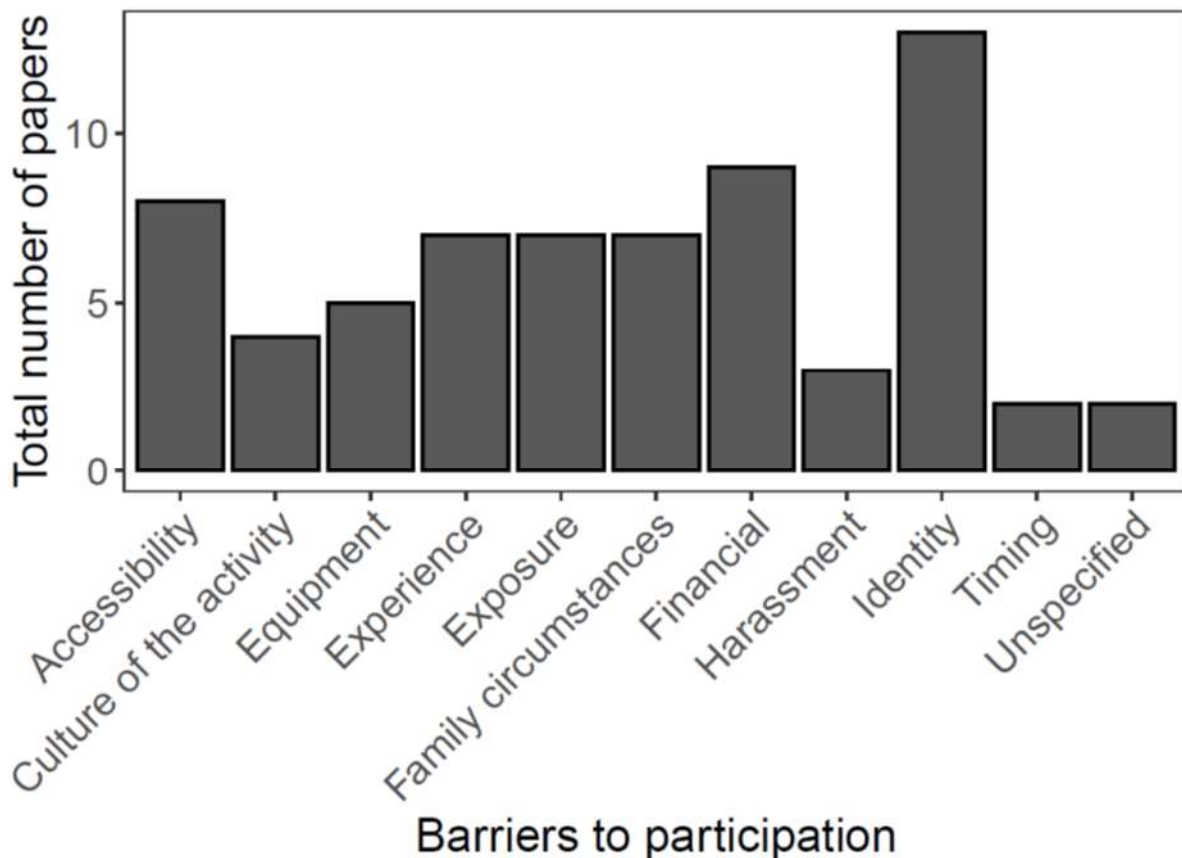


Figure 4: Barriers to participation in field courses, fieldwork or outdoor activities identified by the 22 papers included in this review, and the number of papers that recorded them.

3.4 What solutions to removing barriers to participation have been tested or proposed?

I classified possible solutions to removing barriers and promoting inclusion into 19 categories (Tables 4 to 8), though again note that it was difficult to assign solutions to a single category and there is considerable overlap among categories. Solutions ranged from those that could be implemented before the field course to those that would enhance the field experience in terms of: 1) the

physical environment (Table 6); 2) the social environment (Table 7) and; 3) the learning environment (Table 8). Some papers referred to non-specific strategies for increasing inclusivity, which is reflected in the category ‘inclusive practice’.

Table 4: Solutions and the descriptions of facilitating inclusion in the planning stage

Solution	Description
Co-design	Including students in the design of the field course and every stage of implementation.
Inclusive practice	Catch all terms that could be used to describe any of the below solutions.

Table 5: Solutions and the descriptions of facilitating inclusion to increase applications to fieldwork.

Solution	Description
Application process	Consideration of EDI issues in the advertisement and application process, clear signposting around prerequisites, support in the application process.
Exposure	Increase opportunities for exposure to the outdoors, nature and science as early as possible.
Inclusive materials	Ensure promotional materials depict diverse participants. Also relevant to course materials provided.
Institutional support	Clear signals of and commitment to URM support at the institutional level.
Pipeline	Put pipelines in place that can funnel students towards rather than exclude them from fieldwork. Could include all other solutions in this category.
Scholarships	Provide scholarships for field courses and/or equipment.
Vary options available	Provide multiple options including at different times of the year, residential and non-residential, overseas and domestic.
Codes of conduct	Clear signposting around codes of conduct ahead of time so participants know what to expect.

Table 6: Solutions and descriptions of facilitating inclusion regarding the physical environment of fieldwork

Solution	Description
Accessible field sites	Ensure field sites are accessible to those with physical disability or limitations.
Reduced physical activity	Both whilst in the field and in the design – for example, where multiple sites are visited, reduce the number of these to reduce getting on and off transport.

Table 7: Solutions and descriptions of facilitating inclusion regarding the social environment of fieldwork

Solution	Description
Connection to culture	Consider ways to increase the connection of culture felt by indigenous participants.
Identity building	Incorporate activities that help build identity as a scientist or fieldworker – can also be used in the preparation stage.
Social management	Includes strategies to improve social cohesion and foster a feeling of belonging and teamwork. Includes buddy systems, paired working (especially of differently abled participants), as well as awareness of when mixed teams may do more harm than good.
Mentorship	Mentorship of a participant by a staff member or previous participant – can also be used in the preparation stage.
Staff EDI knowledge	Ensure staff have and outwardly demonstrate knowledge of EDI issues.

Table 8: Solutions and descriptions of facilitating inclusion regarding the learning environment

Solution	Description
Accessible materials	Provide course materials in a variety of accessible formats and consider alternative ways of working. Includes innovative technologies such as tactile maps.
Virtual technology	Use virtual technology to enhance or replace field courses where practical.
Sign language interpreters	

4. Discussion

Field courses are an essential component of many undergraduate degrees in the natural and earth sciences but have not achieved the same demographic gap closures of other courses. With a role not just in preparing students for the workplace, but in teaching aspects of the hidden curriculum (Bergenhengouwen, 1987), closing demographic achievement gaps (Beltran et al., 2020), and promoting self-sufficiency and teamwork, few would argue that the idea of field courses *per se* is outdated. Instead, understanding and removing structural barriers to participation in fieldwork is essential. In this review I aimed to identify factors associated with underrepresentation in field courses, summarise the literature on barriers to the participation in field courses of underrepresented groups in fieldwork, and identify possible solutions to improve participation and inclusivity. While the literature available was limited, key patterns included: a strong focus on the US and the UK, a range of factors associated with underrepresentation in fieldwork but particularly those associated with race or ethnicity, and diverse barriers to participation that start before students even reach university. The role of student identity was a strong and consistent theme.

The literature on barriers to participation in fieldwork showed a strong geographic bias. Almost all papers reviewed originated from the United States and the UK. While using Web of Science would bias results towards papers in English, there are many other countries globally in which English is a first language and English is the main language for publishing. Consequently, this bias is likely a true reflection of bias in the published literature. Our understanding of the barriers to participation in fieldwork is likely strongly biased by the lens through which researchers in the US and UK view issues of Equality, Diversity and Inclusion.

Nearly one third of papers focused on ecological fieldwork, but all originated in the United States. The Ecological Society of America (ESA) has been addressing barriers to participation in ecological fieldwork since as early as the 1990s, when it began collecting data on the demographic profile of its members. The ESA has an award-winning mentoring programme for underrepresented

students that has been running for more than 20 years, gives an annual award recognising commitment to diversity in ecology, has a task force on Diversity, Equity, Inclusion and Justice, and a Diversity Committee and clear Codes of Conduct. Many of the authors of the papers I included in my review have been or are participants in many of the initiatives led by the ESA. The US is clearly making great strides towards identifying and addressing issues of inequality in ecology and in fieldwork practice, which is reflected in the decreasing (though still significant) differences in representation among URM (Armstrong et al., 2007). While all the issues highlighted by the US literature on barriers to participation in fieldwork are relevant to the UK, the social and cultural background in which these issues are embedded, both within society as a whole and the Higher Education system, require consideration. A rigorous approach to identifying and addressing inequalities in ecological and environmental fieldwork in the UK was missing and is needed.

The potential for social or cultural expectations of EDI to influence the results of this review were compounded by the nature of many of the papers retrieved. Only just over half of them identified underrepresented participants of fieldwork through systematic and quantitative assessment. The remaining papers *a priori* identified URM, meaning that not only may many factors leading to underrepresentation be missed, but the relative importance of factors could be underestimated.

4.1 Factors associated with underrepresentation in field courses

Race and ethnicity was the most frequently reported factor associated with lower participation in fieldwork, with gender, income and physical disability also frequently reported. Although being the first in the family to go to university was only reported in two papers, the only paper to use university enrolment data (and hence arguably the most objective study) to identify underrepresentation on field courses reported that First in Family was the biggest predictor at a university in the US (Beltran et al., 2020). The papers reporting physical disability as associated with underrepresentation in fieldwork reflect a recent focus on this area of research in geology. The heavy influence of author interest in the focus of many of the available papers

underlines the need for more objective and quantitative work to gain a more complete picture of barriers to participation in fieldwork. The relative importance of barriers to participation is ultimately less important than ensuring efforts to remove barriers are as inclusive and incorporate as many URM as possible, but without rigorous and objective examination of factors associated with underrepresentation, some factors may be missed.

4.2 Potential barriers to participation in fieldwork

Identity was the most frequently reported barrier to participation in fieldwork. One idea that overwhelmingly dominated the discourse around identity was the perception of fieldworkers as white, male and able-bodied, and the idea that this narrative is grounded in a history of colonialism in which heroic male figures undertook risky exploration in remote parts of the globe. A study of 45 subject pages of the UK Higher Education Institution prospectus that included fieldwork images found that none included females, only two included images of non-white students in the field, and there were no examples of visibly disabled students (Hall et al., 2002). Further, images overwhelmingly depicted remote environments that would be problematic to many disabled students.

A feeling of identity as a scientist (Carlone and Johnson, 2007) is strongly associated with perceptions of self-sufficiency and competency. Consequently, many of the other barriers identified were either directly or indirectly related to identity. In particular, exposure to nature, science or the outdoors and prior experience were each mentioned in seven papers, suggesting that barriers to participation start long before students reach university. Gender, ethnicity and family life all affect a student's exposure to the field of ecology, with exposure to the natural environment and/or the field of ecology, and family support, all significant predictors of a decision to become an ecologist (Armstrong et al., 2007). The social-cognitive theory of career development (Lent et al., 1994) integrates background learning experiences and personal factors that feed into student feelings of self-efficacy, noting that a feeling of self-efficacy in an area strongly underpins the interest development that underlies the choice to pursue a career in science more generally (Lent et al., 1994) and retention in ecological careers more specifically (Bonfield et al., 2021). A feeling of

competence or self-sufficiency is essential to the notion of science identity, suggesting that exposure and experience are intricately linked with the identity issue highlighted by so many papers.

4.3 Possible solutions to removing barriers

There were many and diverse solutions proposed and tested in the papers I reviewed. I classified these barriers as far as was practical into nineteen categories that I in turn grouped according to whether they would take place long before a student entered the field, at the application stage, or during the field course itself. Solutions that could be implemented during a field course included those that related to the physical learning or social environment. Many solutions related to the role of exposure, experience, and identity, but many were also practical steps to reimagine the way we practise fieldwork to ensure it is accessible to all. Practical steps included questioning when and where physical and outdoor field courses are necessary. Where outdoor fieldwork is necessary (and noting that it was often considered not only necessary but hugely beneficial to participants regardless of background and level of physical ability), several, quite simple solutions were proposed and tested. For example, reducing the number of stops can improve accessibility for those with physical disabilities, while pairing able-bodied students with physically disabled students can not only enhance the field experience of both participants but promote the social cohesion considered so important on field courses. It was also noted that there shouldn't be simply non-residential or campus-based alternatives for those for whom residential fieldwork may be problematic, since this only serves to widen the gap between those that feel comfortable in the field and those that do not.

Bowser and Cid (2021) outline a framework that they call the 4Cs: Comfort, Connection, Confidence and Capacity. Comfort at the recruitment stage, increasing a feeling of cultural or social connection as they prepare, developing confidence during the field experiment, and enhanced capacity to carry out ecological work as the ultimate goal. All of the solutions I found during my review link to the four stages of this framework, which may provide a useful starting point to implement change at the institutional level. While the

potential for barriers to field courses to exist even before students reach University may seem to limit the value of early interventions at University, feelings of self-efficacy are not static (Lent et al., 1994). Exposure to field courses even at the University level is crucial to encouraging participation (Armstrong et al., 2007). Consequently, by the time students reach University it is not too late to encourage interest development and enhance exposure to field courses, ensuring both comfort and connection of a diverse student body to what is considered by some as a rite of passage (Morales et al., 2020).

4.4. Future extensions

Quantitative research on barriers to participation in fieldwork is lacking. I identify at least four avenues for expanding the research I have described here. First, broadening the search terms used. I specifically focused on fieldwork or outdoor recreation but broadening the search to include barriers to participation STEM more generally may highlight factors associated with underrepresentation on field courses not considered here. Second, searching other resources such as blogs, conference papers, learned society web pages and resources not in English. In reviewing the papers retrieved from Web of Science I came across many more relevant papers from the grey literature or smaller society journals. I did not add those here due to time constraints but, while they often covered the same material as the paper in which they were cited, these may generate more in depth insights into potential barriers. Third, increasing efforts to more objectively identify factors associated with underrepresentation through greater use of enrolment data and surveys. Because many papers had *a priori* expectations of the factors associated with underrepresentation, and the barriers faced by underrepresented groups, our understanding of barriers to participation may be skewed by the views of a few researchers. Finally, as Bowser and Cid (2021) note, it is widely recognised that a sense of identity, belonging and place is vital to feelings of inclusion, but such research has rarely been applied to the field experience. Explicit exploration and application of ideas around establishing a sense of belonging and place in ecological field courses for URM is a crucial next step.

4.5 Implications for practice

This review has highlighted that removing barriers to participation in field courses must happen at every stage. A simple action highlighted in several papers that are achievable at the level of the individual (hence possible in my own practice) was the need to make visible ahead of time Codes of Context, staff awareness of EDI issues, and the potential for adjustments to be made as necessary. At the Institutional and Departmental level, there are a number of ways in which possible barriers to participation could be addressed, including: 1) editing of prospectuses to increase the visibility of field courses whilst ensuring images include those that visibly identify with different genders, races and levels of physical abilities; 2) developing institutional Codes of Conduct that not only include behaviour on field courses but also best practice for field course design, including wherever possible avoiding courses that could be seen as perpetuating colonial ideas and values; 3) co-design of courses with students, and with local residents wherever residential field courses are undertaken; 4) the availability of multiple options in ways that do not lead to URM missing out on some of the more appealing aspects of residential field courses, such as social cohesion and exploration of new locations; 5) incorporation of alternative technologies and ways of thinking and doing as standard, rather than in response to individual needs as they arise; 6) ensuring field opportunities are available early in the Undergraduate degree and establishment mentorship opportunities to encourage early participation.

5. Conclusions

Overall, the review has highlighted the need for structural change around the way fieldwork is planned and implemented, along with other early interventions associated with best diversity and inclusion practices. However, I would caution against reactive behaviour based on what is currently an emerging and still quite limited area of research. I instead argue there is a need for more rigorous and objective research aimed at identifying barriers to participation in fieldwork, noting that such research must involve the voices it seeks to amplify.

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