

‘Pushing the limits’: experiences of women in tropical peatland research

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Abstract. Science fields, including tropical peatland research, are facing persistent under-representation of women. In this perspective piece, we explore, as women at different stages of our career, our personal experiences of ‘what is it like to be a woman working in tropical peatland science’? We collected our responses and analysed them thematically. Although we come from a variety of different backgrounds and cultures, our responses all dealt with common issues, such as from practical challenges of being women in the field, persistent sexism, issues of harassment to navigating the politics of research as a woman. The peat swamp is seen as a site of rebellion against traditional gender roles. Senior female role models were also vital for us all, which highlights that mentoring schemes in aquatic and wetland research, as in other science fields, need further consideration and investment. Continuing to improve gender balance is central to effecting a positive change in research culture, and we stress that the issue of the ‘bravado’ surrounding fieldwork needs to be further explored and challenged. By pushing these ‘limits’ both in the field and in the academy, we will not only produce a more equal and compassionate working environment, but also ultimately improve our science.

Additional keywords: conservation, ecology, tropics, wetlands.

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Introduction

Although women have made significant contributions to science and the fields of conservation and ecology (Langenheim 1996), fields of science, technology, engineering and mathematics (STEM) including wetland research are still facing a persistent under-representation of women (Clark Blickenstaff 2005; Hill *et al.* 2010; Martin 2012; Weisgram and Diekman 2014;

Williams 2018). Whereas there has been some headway made in a few STEM disciplines (e.g. biological sciences), many others, including the geosciences, have shown a persistent or worsening gender gap in the past decade (Larivière *et al.* 2013; Thornbush 2016; Hernandez *et al.* 2018). As Daldrup-Link (2017, p. 807) wrote, ‘women are admitted to the basements of STEM institutions, but only few make it to the top floor’. The loss of capable

women with the progression of seniority in STEM disciplines is due to cultural and structural obstacles, with the latter often metaphorically depicted as a 'leaky pipeline' (Pell 1996; Englander *et al.* 2012). Whereas certain aspects of women's situations in science and academia have improved over time, women are still more likely to leave the field of science, have greater responsibility for childcare and experience challenges with childcare and safety while pursuing field-based research (McGuire *et al.* 2012). As Martin (2012) wrote, it is important for us to acknowledge gender disparities, along with the experiences of women who have faced gender-based challenges in ecology and other sciences. Here, we present our own experiences.

Many of the inequities and issues faced by women ecologists that Langenheim (1996) discussed in her now 23-year-old paper still persist (Martin 2012; McGuire *et al.* 2012). Whereas overt discrimination policies may no longer be in place, the issue of under-representation continues to be relevant across the sciences, including in tropical peatland research (Cho *et al.* 2014). Although data on the exact numbers of women in tropical peatland science (and, even more broadly, across wetland sciences) do not exist, this gender disparity is well illustrated by a recent international conference for peatland researchers (International Jubilee Symposium of the International Peatland Society, 11–13 September 2018), where, of 15 invited keynote speakers, only one was a woman. Looking also at the number of first-author abstracts presented at the International Peatland Congress in Kuching, Malaysia, in 2016 (a large, international and well-attended conference for peatland scientists), there was approximately one woman to every two men. Of invited keynote speakers, 11 were male, and 3 were female. These figures indicate gender imbalances in this field. The number of women compared with men giving invited talks at conferences should also not be assumed to reflect the number of women in the discipline, with gender bias in keynote speakers still being a persistent problem across STEM disciplines (e.g. see Sardelis and Drew 2016; Klein *et al.* 2017; Farr *et al.* 2017; Ford *et al.* 2018).

As we will highlight in the coming paragraphs, representation matters. In fields such as tropical peatland research, which has fieldwork at its heart, women face all the challenges and dangers of fieldwork that men do, along with often additional challenges that their gender introduces. Part of narrowing the gender gap in research and academia is making these spaces safer and more comfortable for women to inhabit and thrive within. Also, as experienced by some of the authors of this paper, being a woman in the field can also provide opportunities, such as being seen as less threatening and, therefore, having access to data and information that male researchers may not have access to. We explore some of these challenges and opportunities from our own experiences. As McGuire *et al.* (2012) wrote, the unique aspects of ecological fieldwork in remote areas have been neglected in discussions of women in science. Here, we aim to contribute to these discussions through presenting our own experiences and we show that, by doing so, we can bring to light areas that require further research and consideration for changing research cultures.

The journal *Marine and Freshwater Research* is celebrating its 70th birthday through a special issue highlighting women's contribution to freshwater science. With the journal's goal to

improve gender equity and diversity in science, we took this as an opportunity to reflect on our own experiences of being women in tropical peatland research. Notably, when conducting literature reviews for this piece, there was a lack of journal articles focusing on the experiences of women researchers in different habitat types, and we found no articles on freshwater or marine habitats. Whereas our experiences are likely to be shared by other women across other field-based disciplines, it is important for these experiences to be documented in literature. This perspective piece tackles this literature gap, with a unique focus on tropical peatlands and we hope to see future publications highlighting both different and similar experiences of women in other fieldwork science fields.

Tropical peatlands are habitats that exist because of a combination of extreme chemical and hydrological conditions resulting in acidic blackwaters. The near-constant waterlogged conditions inhibit microbial decomposition; so, any organic debris (i.e. leaf litter, woody debris) accumulates and is stored as a peat layer, which builds up over time (Page *et al.* 2011). However, despite these seemingly hostile environmental conditions, tropical peatlands are host to notable floristic and faunal diversity (Posa *et al.* 2011; Giesen *et al.* 2018), with plant and animal species developing a range of anatomical and physiological adaptations to deal with the prevailing environmental conditions (e.g. buttress roots on trees and air-breathing catfish; Page *et al.* 1999). Tropical peatlands also play a substantial role in the global carbon cycle. They store an estimated 105 Pg (billion tonnes) of carbon (Page *et al.* 2011; Dargie *et al.* 2017), equating to ~16% of all peat carbon and 5.5% of the global soil carbon pool (IPCC 2013), although these carbon stocks are at risk of depletion from land-cover and land-use changes and fire (e.g. Miettinen *et al.* 2017). As such, these ecosystems are some of the most distinctive carbon- and biodiversity-rich habitats in the world. What brings us together as authors of this paper is our shared passion for these extreme tropical environments (Fig. 1).

Everything about tropical peatland is mesmerising. The fallen logs, the forest reflection on the pond-water, the mosses crawling on the trees like dark green cloaks or the rays of sunlight shining through the tree canopy and fog. [An author's reflections for this paper]

Approach

This piece does not aim to be a review of literature regarding the underlying reasons for the under-representation of women in tropical peatland research or science in general (see the following for more information on this: Bracken and Mawdsley 2004; Clark Blickenstaff 2005; De Welde and Laursen 2011; Englander *et al.* 2012; Weisgram and Diekman 2014; Daldrup-Link 2017). Rather, our main objective is to seek to centre our personal experiences of challenges and achievements and share our own perceptions of what it is like as women in our field. This allowed us to explore the question 'what is it like to be a woman working in tropical peatland science?' We, therefore, also note that the experiences of women are diverse and we, by no means, speak for all women in peatland research. We recognise that we (the authors) also benefit from certain privileges related to, for example, our gender identities and expressions, education level, nationalities and backgrounds. We acknowledge the particular



Fig. 1. Sebangau peat-swamp forest in Indonesian Borneo. Photo by Borneo Nature Foundation, CIMTROP, Sara Thornton.

struggles that trans, intersex and non-binary people face in academia, research and the world in general. Conversations on gender equality can easily fall into binaries that perpetuate violence through erasing people of different sexualities, expressions and identities. These stories are equally needing space and consideration, and this is something we must actively demand.

This paper draws on the experiences of 12 women at different stages of their careers, from those recently awarded their Ph.D. degrees to more senior researchers including two professors (there are, to our knowledge, only three female professors specialising in tropical peatland science), and across Indonesia, Malaysia, Finland and the United Kingdom. We include tropical peatland researchers from a variety of backgrounds and nationalities to avoid presenting only white and western perspectives, which is vital to actively counter in fields such as tropical peatland research where our fieldwork and research focus is not in 'the West'. We invited all those who participated to be included as authors, to increase transparency for others reading this paper; the experiences and views we present are our own. Two respondents did not decide to be included as authors, but they confirmed that they were happy for their answers to still be included in the overall analysis for the paper. The leads of this paper were Thornton, Cook and Page, who reached out to women researchers known to them who were conducting tropical peatland research. To limit possible biases, the authors are not all familiar with each other; for example, Thornton has not previously worked with any of the authors

apart from Page (who was Thornton's Ph.D. supervisor). They (the authors of this piece and two others) reflected on the following questions:

- (1) What does it mean to you to be a woman in tropical peatland science and research? When thinking about this question you might think about what it means to be a female scientist, a female peatland scientist, a female tropical peatland scientist (most likely living, working or researching in a developing country).
- (2) What would you say to women interested in pursuing a career in tropical peatland research? What are the constraints and opportunities?
- (3) How do you think women can or should be supported in tropical peatland research? How supported have you felt by other scientists (men and women) in your field?
- (4) Where do you see your career going? How important is it to have female role models?
- (5) Do you have anything else to share or add?

The answers to these questions were then collected over email and then analysed thematically by Thornton, Cook and Page. The following paragraphs explore the main themes that emerged and are accompanied throughout by quotes from the authors. Some authors expressed a preference for their views to remain anonymous, and we, thereby, do not credit quotes to specific people.

Reflections

Challenges faced by women in tropical peatland research

The male-dominated space of tropical peatland research is not unique and, as in other spheres, and particularly in the STEM fields, women in tropical peatland research face a variety of challenges. Some can be practical, such as dealing with feminine hygiene and menstruation, especially as fieldwork in remote areas can be lengthy and depend on the use of simple facilities (if any at all). This is often overlooked in fieldwork settings; it can be daunting and is certainly not a challenge that male researchers have to face. Some authors experienced a pressure to adhere to certain gender roles during fieldwork, for example, an expectation for women to cook in the field, or with male research assistants refusing to do certain work if they deemed it more of a 'woman's' job. Challenges in pursuing a career in research and academia can also be very culture specific, with one author providing an example from Malaysia where there is still some stigma attached to highly educated females related to their marriage eligibility:

families of daughters with PhDs can demand higher dowries; highly educated women are less likely to quit their career to take care of children... Hence, men can be discouraged to pursue smart, educated women as life partners.

All of these challenges can turn into potential or perceived barriers for women in tropical peatland research.

Apart from the gender stereotypes that the authors encountered, there are other gendered challenges that women face such as the risk of facing harassment and toxic power dynamics with men, both in the field and in academia. These were not experienced by all authors, with some reporting that their gender had

never been an issue, highlighting the heterogeneity of women's experiences. However, these situations are unfortunately common across field research and the educational environment, as is well documented now in blogs, news and literature (e.g. Clancy *et al.* 2014; Pante 2014; Kloß 2017). Sometimes these situations can be exposed, but at other times there is a fear of the potential backlash of reporting (i.e. harming the research itself, or harming reputations and careers of women who report, particularly for early career women). Some authors of this paper discussed dealing with harassment through altering their behaviour in the field: 'I often have to change my behaviour in certain ways (e.g. I can't be as independent as I would normally be), and actively be aware of my surroundings to an extent that my male colleagues would be completely unaware of', and suggesting to junior researchers to 'wear wedding rings and lie about their relationship status'.

Having to deal with this additional burden can be a frustrating, tiring and costly reality for women conducting tropical peatland research, and field research in general.

Challenges are not only physical and mental, but also political: 'Just as field research in tropical peat swamps can be hot, sweaty and demanding, entering the peatland political arena can also take a certain amount of courage and stamina'. This leaves interpretation of results sometimes vulnerable to political distortion and manipulation to satisfy a specific socio-economic agenda (Goldstein 2016) and can be particularly challenging for young female academics. One author wrote:

I've had difficulties, for example, when meeting people who may have already heard of my work and do not entirely agree with my findings and recommendations... I have been 'scolded' by older, mostly male practitioners (both privately and publicly) who think I am sending the 'wrong message' with my work.

Rather than being dissuaded, this has led to perseverance and a greater determination to overcome such obstacles:

As long as you are confident in your methods, you should not be intimidated with those who disagree with you!

Nevertheless, the challenge of dealing with the politics of peatland science, which are usually played out in a male-dominated arena, is something that few early career researchers are adequately prepared for.

Through the challenges, we find our resilience

Undertaking fieldwork in tropical peatlands is demanding, both physically and mentally. Peat-swamp forests are wet, the peat surface is uneven, tree roots and buttresses present obstacles and trip hazards, spine-laden pandan (*Pandanus* spp.) leaves can lacerate the skin, and so on. In deforested peatlands, heat exhaustion is an ever-present risk with day-time temperatures often exceeding 45°C. Although fieldwork in these environments is challenging, this is not necessarily a deterrent; for some of the authors, this was inherently one of the reasons they were drawn to tropical peatlands, to challenge themselves mentally and physically – to 'push my limits'. A drive to step out of our comfort zone is what brought us to do this research, and, on top of this, many want to challenge gender stereotypes associated

with this work, where fieldwork is often seen as 'dirty' and not 'women's work':

...it is extremely odd to see women voluntarily going to the field, being full of sweat, carrying enormous equipment, etc. I've got an impression they expect women to sit comfortably at home or at least having careers on heels.

The fieldwork itself requires these gender roles to be challenged, pushing these societally imposed 'limits' as well, and this often brought with it a sense of pride for authors (also found by Englander *et al.* 2012). The tropical peat swamp turns into a symbol of resistance against traditional societal expectations; in the swamp, we rebel.

To me working in tropical peatlands is the ultimate place to show that women are as tough and ambitious as men as field work in tropical peatlands must be one of the most challenging field work conditions out there

...I am drawn to the challenge, and when faced with the reality that field research is still often male-dominated, with the perception that women are perhaps not as tough or strong, I think a part of me wanted to work in the toughest forest I could find! And that was a peat-swamp forest.

Questions like 'can you even walk in the field?' or 'can you really carry your backpack?' can always be expected. Frankly, it is a great feeling to prove them wrong and to see their expression seeing me doing things they thought I couldn't.

However, this need to prove 'toughness' and our place in tropical peatland research is tiring and costly. Some authors brought up the 'bravado' that is often associated with fieldwork. A conundrum can be encountered, where, as women we fear we might not be viewed as strong enough, we want to prove that wrong, and then suffer a loss of access to expressing vulnerability:

Initially when I started out working on tropical peatlands, I was extremely nervous and some aspects of the fieldwork I found difficult, physically and mentally. At the time I felt I could not voice this for fear of being perceived as being weak or a 'typical girl' and that people would question my suitability for the role.

This potentially creates another barrier for women, who are likely to be conditioned from childhood to question their physical and mental abilities more than are males (Ross *et al.* 2012; Kay and Shipman 2014). Additionally, this machismo surrounding fieldwork will certainly negatively affect not only women but men as well and is something that needs to be tackled in the culture of field research.

I have a big issue with the bravado that surrounds fieldwork, this idea of needing to be tough and just get on with things. I think it can lead to very dangerous situations, and it is up to us all to challenge this.

Through the difficulties of fieldwork and of being women working in one of the most challenging environments out there, the swamp has also taught us lessons of our own resilience.

Authors spoke of the fieldwork and its emotional and physical challenges 'shaping' them into the person and scientist they are today and building their confidence:

I've learnt that there's no problem I can't figure out, challenge I can't tackle and no reason why I should ever have to doubt my intelligence or ability.

Perhaps this is why many of us feel such a strong emotional tie to the peat-swamp: facing and overcoming the challenges it has presented turned into deep personal experiences of better knowing ourselves and our resilience. We expect this to be the case in other research environments elsewhere too.

I know now that I am highly resilient and I value this lesson from the swamps.

There has to be a focus on how to make fieldwork more inclusive; as McGuire *et al.* (2012) wrote, there is a need for childcare, field assistants, and other support programs to promote fieldwork at both field stations and remote locations. We agree with the author's recommendations that funding agencies should encourage field stations to make childcare and field assistants more readily accessible, and information about these services should be listed on the field stations' Websites. Academic institutions also have a role to play in making fieldwork more inclusive through providing similar support for women who face gender-based barriers to conducting fieldwork.

The importance of female senior role models

Our fieldwork empowers us and through it we explore and discover our own resilience. Another invaluable aspect of building this resilience is a strong support network of peers:

At times it is hard to find the strength to project myself. I am lucky to have some strong female colleagues that make me feel that I can do this and that I have a place in this research field.

Had it not been for the close female and male scientists around me I would not have realised my own value and had the strength to confront these issues. This has made me feel optimistic for the future.

Even though the numbers of women working in tropical peat science seems to be growing, there are still few women at the forefront of this field (Prof. Susan Page, pers. comm.), despite one of the earliest pioneers of tropical peatland research being a woman (Dr Elisabeth Polak; Havinga and Muller 1981). The majority of authors, particularly early career scientists, stressed the 'essential' need for both female role models and mentors as well as supportive male mentors. This stems, in part, from a feeling of 'imposter syndrome' as a result of, again, the conditioning from a young age for girls and women to question their physical and mental abilities. Indeed, evidence suggests that women role models are more effective at ensuring the continuation of women in STEM disciplines (Langenheim 1996; De Welde and Laursen 2011; Drury *et al.* 2011; McGuire *et al.* 2012; Avallone *et al.* 2013; Weisgram and Diekman 2014; Hernandez *et al.* 2018; Salerno *et al.* 2019). Senior women academics are vital in their support of junior women in publishing and, thereby, establishing themselves as researchers

(Salerno *et al.* 2019). This is in stark contrast to male principle investigators (indicated by last author) who almost do not publish with women in zoology and ecology (Salerno *et al.* 2019, who found that women represented 18% of authors in articles with a male last author and 63% of authors in articles with a female last author, further indicating gender biases and discrimination at play). One author noted that her continuation and ability to sustain her peatland research has been critical for her success by making her feel 'normal' and boosting her inner evaluation of success (i.e. 'being brilliant'). This feeling of normality stems from the need to have fellow female peatland scientists not just to look up to but to also have honest conversations with, an opinion emulated by nearly all authors. It is clear that mentoring programs can provide substantial benefits. There are very few mentoring schemes for women in peatland or wetland science; we came across only one by the Society of Wetland Scientists (based in the US) that has a section dedicated to supporting women scientists. They also have an active Facebook page (<https://www.facebook.com/Women-in-Wetlands-Society-of-Wetland-Scientists-834012543320108/>). There is a need to have mentoring schemes internationally, and there are none that we know of in Europe or South-East Asia. Mentoring schemes could follow that provided by the British Ecological Society; 'Women in Ecology Mentoring Scheme' (see <https://www.britishecologicalsociety.org/learning-and-resources/career-development/mentoring-opportunities/>, accessed 18 June 2019), which has been running since 2009. Further research into what makes a mentoring scheme for women in science effective is recommended.

A strong common worry particularly among the early career researchers is being able to balance motherhood with a successful career:

...if ever my personal responsibilities at home were to change or I felt no longer physically able to do the fieldwork I do occasionally worry what this would mean for my career [also see Avallone *et al.* 2013 and Weisgram and Diekman 2014].

As one author wrote, the provision of childcare or other forms of care should not be considered a woman's issue, but the patriarchal society we live in still makes it predominantly so. Whereas this is a common fear for most women in multiple disciplines, a career in tropical peat science is often accompanied by long periods in the field. Several of the authors note the toll this can take on personal relationships and what this might mean for future family ambitions:

Working with female colleagues or indeed with men that take substantial responsibility for child care is also helpful... For me this is the biggest challenge. Is it possible to have a successful research programme in tropical countries many hours from home and be the main caregiver of your children?

As Weisgram and Diekman (2014) wrote, the convergence of graduate and postdoctoral training with women's prime fertility and child-rearing period leads to career advancement in academia being challenging, particularly for women in STEM fields requiring extensive time commitment to laboratory and field research. However, the fears surrounding the compatibility of career and family are countered through supportive female

role models and colleagues who have achieved successful careers while balancing motherhood (as also supported by De Welde and Laursen 2011; Avallone *et al.* 2013; Weisgram and Diekman 2014). Indeed, one author acknowledged that academia is the best place to foster a good work–life balance by providing the flexibility to be an involved mother while developing your career. We mirror Weisgram and Diekman (2014) in urging scholars and policy-makers to continue efforts to make STEM fields more family-friendly (for both men and women) and decrease the baby penalty that women with children pay. Otherwise, increased recruitment of women will not result in increased retention.

For some of the women further along in their careers, they feel that they have a responsibility to address these concerns and show their students that obtaining a work life balance is more than achievable. To early career scientists these life stories and shared worries, which can be overcome, create a sense of hope, optimism and inspiration. Overall, there is a general consensus that we must continue to inspire and nurture one another through our collaborative network:

As your career develops, take care to not pull up the ladder behind you; rather pull other women up with you. Provide active support and encouragement to your peers and those attempting to follow in your footsteps

This is, in turn, helped by the grounding that comes from talking openly about our worries and fears. One way of helping expose early career researchers to fellow peat researchers is through conferences. These provide a platform to meet distinguished scientists and future role models. Having read about the importance of female role models for women tropical researchers, it is paramount that organisers of future peat-science conferences consider the gender balance of visible speaking roles and the overall effect this has on the research community.

Opportunities of being a woman in tropical peatland research

As many of the authors noted, tropical peatland research is an exciting and new field, with plenty of future opportunities:

There are endless paths which your career could take and a wide range of skills you could pick up along the way.

In addition to the potential that the field offers, the authors noted that the tropical peatland community is also small and eager to form strong collaborative networks. This has contributed to an experience of a more inclusive community, which is promising for future women in this field:

The peatland research community is, for the most part, open, friendly and collaborative; this means that gender barriers are weaker and more easily overcome than in some other male-dominated areas of science.

As previously discussed, challenging gender stereotypes can help demonstrate that other women can do the same and that their voices can be heard:

I hope that my research journey has helped to break down gender stereotypes about women participating in field science in remote environments as well as demonstrating that

women can have a voice in wider debates about sustainability and responsible environmental management.

Additionally, not conforming to traditional gender roles can come as a surprise to other researchers and field staff, making women researchers stand out, with this visibility sometimes working advantageously:

In some ways, I wonder if being a female interested in tropical peatlands, rather than a male, makes me and my work more intriguing ... and so generates more interest and potential engagement.

This sense of intrigue can also help ‘open doors’ to information because ‘people can feel less threatened and more open to females’. This is an experience documented in other fields as well (e.g. Vongalis-Macrow 2016).

Challenging stereotypes, pushing our own physical and mental limits, has solidified our place in the field of tropical peatland research. This has fostered within us a pride in being where we are, and a sense of resilience central to our identities as women, and as researchers:

It means everything to me that I am a woman in science and research, working in the tropical rainforests I dreamt of as a child. I put my heart and soul into what I do, and it is part of who I am.

As Bracken and Mawdsley (2004) wrote, we revel in the ‘muddy glee’ of fieldwork (see photos in Fig. 2). We hope that this piece supports continued conversations around what diversity in science and academia means and how we can move forward in tropical peat science as well as STEM in general. Ultimately, the greater the diversity of people and voices present, the better our research and science will be (Larivière *et al.* 2013; Cho *et al.* 2014; Tallis and Lubchenco 2014; Hernandez *et al.* 2018).

Conclusions

This perspective piece outlines some experiences of women in tropical peatland research, ranging from why we became inspired to work in these environments, some of the challenges and opportunities that we have faced, and some thoughts for the future. Needless to say, although we found common themes throughout each of the authors’ lived experiences, there was also much variability across each theme. What is clear is that, following on from what we have heard from so many other STEM fields, a more balanced gender representation in tropical peatland research is needed, and would benefit everyone in the field. This is a call for all scientists of all genders to come together to deal with the persistent issues we outline in this paper; it is unacceptable for invited male speakers to still be the dominating voices at conferences. It should always be considered best practice to ensure that the widest variety of voices is heard, considering, for example, gender identities and expressions, nationalities, sexualities and race. Only then can we build a science that is just, progressive and as world-changing as we all hope our science to be. This also involves broadening our conversations and awareness about marginalisation to include other identities beyond the gender binary.

When it comes to issues of harassment in the workplace, organisations need to work *with* women to find solutions that work for them. We know what we need; so, involve us in the

decision-making process, and understand that these will sometimes vary on an individual level. From the very beginning, everyone (men, women, non-binary) should be made aware of clear procedures that provide sufficient support to those reporting harassment and inappropriate behaviour.

It is also clear from our reflections how important mentoring and peer-support networks are, particularly with senior female role models. These are vital in not only inspiring women in science, but also in helping retain them in academia. This was a shared experience for all authors and provides hope for other



Fig. 2. What a tropical peatland scientist looks like.

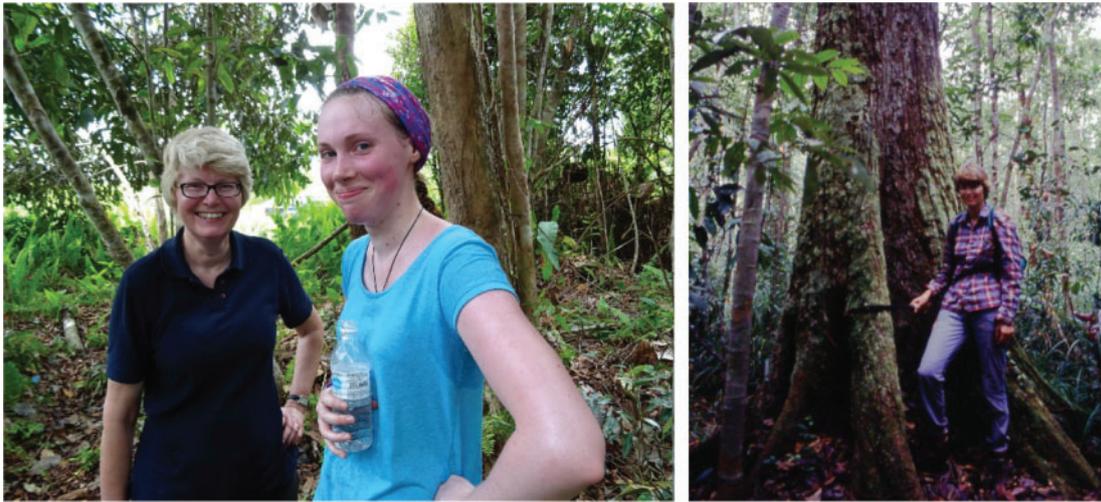


Fig. 2. Continued.

women in and entering the field of tropical peatland research. It also stresses that formal or informal mentoring schemes in wetland science and, in this case, tropical peatland research have the potential to provide a powerful opportunity for tackling the under-representation of women and requires further effort and consideration.

Cultural change that supports women in tropical-peatland science is required. Gender stereotypes are still prevalent, from harmful perceptions of women in the field to unequally shared responsibilities of childcare. This will surely change over time, but we want to highlight that these concerns exist now. Authors brought up the issue of 'bravado' surrounding fieldwork which is expected to be found in other fields and warrants further research attention; we can fix only what we know. Challenging this culture would likely benefit everyone, so that together we can courageously move towards more compassionate and thereby healthier research environments. If we want to bring good to the world, we must start with ourselves.

Author contributions

S. A. Thornton, S. Cook and S. E. Page conceived, designed and organised the study. All authors contributed to the writing of the manuscript.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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