

Ethical considerations when conservation research involves people

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Stephanie Brittain <sup>1,2</sup>, Harriet Ibbett <sup>3,1</sup>, Emiel de Lange <sup>4</sup>, Leejiah Dorward <sup>3,1</sup>, Simon Hoyte <sup>5</sup>,  
Agnese Marino <sup>5,2</sup>

EJ Milner-Gulland <sup>1</sup>, Julia Newth <sup>6,7</sup>, Sarobidy Rakotonarivo <sup>8</sup>, Diogo Veríssimo <sup>1,9</sup>, Jerome Lewis <sup>5</sup>

University of Oxford, Department of Zoology, 11a Mansfield Rd, Oxford, OX1 3SZ <sup>1</sup>

Institute of Zoology, Outer Cir, London NW1 4RY, UK <sup>2</sup>

School of Natural Sciences, Bangor University, Bangor LL57 2DG, UK <sup>3</sup>

University of Edinburgh, Old College, South Bridge, Edinburgh EH8 9YL, UK <sup>4</sup>

University College London, Gower St, Bloomsbury, London WC1E 6BT, UK <sup>5</sup>

University of Exeter, Stocker Rd, Exeter EX4 4PY, UK <sup>6</sup>

Wildfowl and Wetlands Trust, 78 Ballydrain Rd, Comber, Newtownards BT23 6EA, UK <sup>7</sup>

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University of Stirling, Biological & Environmental Sciences, FK9 4LA, UK <sup>8</sup>

San Diego Zoo Global, 2920 Zoo Dr, San Diego, CA 92101, USA <sup>9</sup>

**Corresponding author:** Stephanie Brittain, [Stephanie.brittain@zoo.ox.ac.uk](mailto:Stephanie.brittain@zoo.ox.ac.uk)

## **Abstract**

Social science is becoming increasingly important in conservation, with more studies involving methodologies that collect data from and about people. Conservation science is a normative and applied discipline designed to support and inform management and practice. Poor research practice risks harming participants, researchers, and can leave negative legacies. Often, those at the forefront of field-based research are early-career researchers, many of whom enter their first research experience ill-prepared for the ethical conundrums they may face. Here, we draw on our own experiences as early-career researchers to illuminate how ethical challenges arise during conservation research that involves human participants. Specifically, we discuss ethical review procedures, conflicts of values, and power relations, and provide broad recommendations on how to navigate ethical challenges when they arise during research. We encourage greater engagement with ethical review processes and highlight the pressing need to develop ethical guidelines for conservation research that involves human participants.

## **Introduction**

Many environmental changes including biodiversity loss, are driven by human activities (Schultz 2011; Tilman et al. 2017). As a result, conservationists increasingly draw on the social sciences to better understand these processes and to improve outcomes in conservation policy

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and practice (Mascia et al. 2003; St John et al. 2010; Sandbrook et al. 2013). Since its origins, conservation biology has been a disciplinarily and methodologically complex field which incorporated elements of philosophy and the social sciences (Soule 1985), yet traditionally the field is rooted in natural sciences and dominated by biological and ecological epistemologies (Bennett et al. 2017). The recent shift towards interdisciplinarity represents a substantial refocus. However, the formal training received by conservation scientists remains largely unchanged (Fox et al. 2006; Bennett et al. 2016). Because of fundamental differences in the way natural and social science research is conducted, this means conservationists can find themselves ill-prepared for the methodological and ethical challenges that arise during social research (St John et al. 2014; 2016).

Much conservation research that involves collecting data from people is conducted by non-local researchers, within social and cultural contexts differing significantly from their own (Lunn 2014; Kiik 2019). Such contexts may pose a range of ethical dilemmas (Minteer & Collins 2005), particularly when researchers experience situations that cannot be easily resolved using their own cultural norms (de Laine 2000). As a normative and applied discipline, conservation research often aims to support and inform conservation practice, and is undertaken by a range of actors, each guided by differing agendas and values, but with a shared objective of 'conserving biodiversity'. Yet, this objective may not be perceived, nor experienced, positively by others. Failure to recognize this may compromise the wellbeing of the participants, the researchers, and the success of the research itself (Palmer et al. 2014).

In some countries with settler or colonial histories, current conservation actions may still be

perceived as colonial impositions (Kiik 2019). Conservationists have been criticized for overlooking local techniques for sustaining biodiversity (Lewis 2016), and for poor partnership with stakeholders. Conservation researchers may mistakenly see themselves as neutral parties shielded by the objectivity of science (Redpath et al. 2013), but in reality, they are stakeholders with interests and goals, which may conflict with those of other actors (e.g. Fairhead et al. 2012; Lewis 2016). Failing to acknowledge this, risks reinforcing harmful power dynamics, perpetuating historical injustices, and increasing tension between stakeholders (Peluso 1993). As a sector, conservation is rightly experiencing growing scrutiny; with actors increasingly asked to ethically justify their actions (Robinson 2011; Newing & Perram 2019).

Reflecting its roots in the natural sciences, research ethics in conservation has generally been focused on the treatment of animals, rather than on the ethics of research involving people (Minteer & Collins 2005; Wallach et al. 2018; Hayward et al. 2019). Yet, researchers have moral, pragmatic, and legal obligations to protect participants from harm, and should always consider the potential effects of their activities both during, and after research (Aluwihare-Samaranayake 2012). Most commonly, ethical review boards (ERBs, also known as Institutional Review Boards) assess the ethical robustness of academic research (Speiglmán & Spear 2008). However, not all conservation researchers have access to ERBs (St John et al. 2016), and not all ERBs are best placed to assess the ethical issues specific to conservation research. Where guidance is inadequate, inappropriate or non-existent, human research ethics risks falling through 'institutional and scholarly cracks' (Minteer & Collins 2005). Despite calls for a stronger focus on interdisciplinary ethical inquiry to support conservationists in their decision-making (Minteer & Collins 2005), little has changed, and safeguards implemented to protect human participants remain under-reported in conservation publications (Ibbett & Brittain 2019).

As early-career researchers, all of the authors of this essay gather data from and about people. We argue it is not unusual for early-career conservation researchers to find their protocols reviewed by, and research supervised by those without recent field experience, experience of social research, or experience in relevant cultural contexts. Unlike other subjects which involve human-focused research (e.g. anthropology, human geography), in-depth ethics training is rarely included in conservation curricula (Saltz et al. 2018). Ethical consideration during research is the morally right thing to do, regardless of the benefits for conservation. Yet, we believe the deficit in training, guidance and reflection that permeates conservation poorly equips researchers during research practice.

In July 2018, 11 early-career conservation researchers from different research institutions within the first eight years of their post-graduate careers convened at the University of Oxford for a workshop. Discussions were facilitated by JL, an anthropologist. Participants had a range of disciplinary backgrounds from the natural and social sciences, including anthropology, ecology, conservation marketing and conservation science, and research topics such as conservation conflict, behavior change, illegal resource use and local indigenous knowledge. Field experience encompassed Brazil, Cambodia, Cameroon, the Democratic Republic of Congo, Italy, Madagascar, Russia and Tanzania.

Prior to the workshop, we anonymously gathered case studies of ethical dilemmas experienced by workshop participants and members of the Interdisciplinary Centre for Conservation Science at University of Oxford. We used these case studies to generate discussion regarding the ethical

challenges commonly encountered during conservation research involving people (Table 1).

Here, we document our discussions, explain why this topic requires urgent consideration and outline measures to improve conservation research that involves human participants.

Specifically, we exemplify why these challenges demand our consideration and outline the measures we believe are urgently required to improve conservation research that involves human participants. We acknowledge that multiple domains of ethics exist, and that ethical debate extends beyond the issues discussed here (see Minter & Collins 2005). Moreover, we recognise that academic research in particular, represents only a small part of conservation activities, and that conservation as a whole is rife with ethical challenges. Here, we restrict our discussion to human research ethics only, partly because this represents our expertise, but also because we believe this topic requires urgent attention from conservationists. While we focus solely on social research methods, our discussion is broadly applicable to any researcher who uses methods that interact with people; for example, our discussions also apply to those who capture images of people (either accidentally or intentionally) via camera traps.

### **Institutional Ethical Responsibilities**

Today, gatekeepers of research practice, including research institutions, donors, academic societies and journals, increasingly mandate the use of Ethical Review Boards (ERBs) for all research involving human subjects (Speiglman & Spear 2008). Primarily embedded in universities and large research institutions, ERBs are typically composed of researchers from a range of disciplines. Their principal task is to ensure that research 'protect[s] the dignity, rights and welfare of research participants' (Dyer & Demeritt 2009; ESRC 2015). Researchers submit protocols to ERBs prior to commencing research, which are assessed to ensure they conform to

the institutions' ethical standards. ERB emphasis is placed on the behavior of researchers towards research participants, revolving around principles such as informed consent, 'do no harm' (whereby researchers protect 'the safety, dignity or privacy of the people with whom they work' (AAA 2009) and rights to privacy, anonymity and confidentiality (Vanclay et al. 2013).

Scrutiny of research protocols by appropriately qualified experts is a vital safeguard and can be a positive learning experience. However, we argue there is a tendency for researchers to poorly engage with ERB's. Partly, this may be because they perceive the procedures as bureaucratic box-ticking exercises designed to protect research institutions rather than research participants (Lunn 2014). As a result, researchers may delegate their ethical responsibilities to ERBs, rather than critically evaluate the ethical implications of their research themselves (Valentine 2005).

But also, because the ERBs often grant approval only to specific protocols which may be inappropriate to the research context.

Gaining 'Informed Consent' is a core requirement of the ethical review process (Wiles 2013) and represents the point at which a 'research contract' is formed between the researcher and the participant. The researcher explains the rules the participant can expect the researcher to abide by (such as confidentiality, anonymity and 'do no harm') in exchange for their participation in the research (Dyer & Demeritt 2009). ERBs frequently stipulate strict procedures for obtaining consent, including delivering specifically worded 'participant information' statements, which contain institutional contact details in case of grievances. However, there are different ways of gaining consent and different cultural understandings of what consent means (Lewis et al. 2010). Emphasis on individual consent may be inappropriate in some cultures (Dyer & Demeritt

2009). In others, gaining permission from a local authority may be considered appropriate, but denies individual participants the freedom to withhold their own consent. Some ERBs and journals still require written consent, yet high illiteracy can render written consent inappropriate and contradict promises of anonymity. Furthermore, participants can often not make contact due to language or logistical barriers. ERB's frame consent as a one-off process, yet we argue, consent should be viewed as an ongoing negotiation that can end if one party does not maintain the other's trust, or if circumstances change (Lewis et al. 2010).

Framing ERB procedures as a valuable ongoing reflective process that promotes the well-being of participants and researchers', while improving research outcomes may prevent ethics from being perceived as an arduous task to 'get over with' (Guillemin & Gillam 2004). Partly, this requires a concerted effort to integrate ethics training, and an understanding of what the "research contract" with participants entails, into the curricula of academic conservation programs. This should also address applicable human rights laws, which are currently poorly understood (Newing & Perram 2019). Beyond academia, organizations carrying out conservation research should also prioritize regular ethics training and opportunities for reflection for staff, students and volunteers, alongside their other relevant training programs (e.g. health and safety, data protection).

Developing and implementing effective formal ethical review processes is a critical step towards embedding ethics into conservation research practice. However, ERBs require expertise and resources often only available to large research institutions. Conservation research is frequently conducted by NGOs, or by people from countries or institutions without the resources or formal

structures to access ERBs. Funder and publisher requirements for formal ethical approval can consequently exclude them from funding and publication opportunities (St John et al. 2016).

One solution may be to form an open-access, peer-led ethical review panel which operates similarly to the journal peer-review process, providing access to adequate ethical review (Ibbett & Brittain 2019).

### **Conflicts of values**

Values are the beliefs and ideals that inform identities and moral integrity, forming the “natural standards and subconscious biases against which we measure the actions and words of others” (Payne & Payne 2004). Researchers must acknowledge that value-based judgments are at the root of all research and conservation activities (Wilhere et al. 2012). Researchers may experience conflicts between their values and their responsibilities under their research contract with participants, as well as with other institutions, collaborators, funders, and other actors. If unprepared for these conflicts, researchers risk making unethical decisions that can cause harm.

Our values can conflict with the prescriptions of ERBs and the implicit or explicit commitments made in our research contract with participants. For example, participants may reveal details of illegal activities if they feel assured by the promises of confidentiality and anonymity. Yet, obtaining this information may raise ethical questions for the researcher if the information provided during the research conflicts with their moral values. Further frustration can arise if the researcher has contacts with people in positions of power (e.g. wildlife authorities, state officials, local leaders, NGOs) with whom sharing information may help prevent future

occurrences. The ethical conundrum is exacerbated by the time limited nature of this issue. Failure to act quickly may result in dire consequences, for example, local species extinction or irreversible habitat loss.

In such instances, researchers must balance their moral values against their contractual responsibilities and obligations to protect participants. Consent procedures provide clear instructions that knowledge obtained should not be used to harm those who provided it. Disclosing such information would break the agreement to 'do no harm' and the researcher's professional ethical obligations. One way of navigating such conundrums is to deconstruct 'content' (e.g. the specific details of an activity, such as the place or persons involved) from 'structure' (the socio-political factors that determine how and why such activities occur) (see Von Essen et al. 2014). For example, rather than divulging the occurrence of specific instances of illegal activity (e.g. the identity of a poacher), it may be more beneficial to focus research on uncovering the forces underpinning it (e.g. the conditions enabling poachers to poach undetected). We acknowledge that it takes time to propose, fund and conduct research, often at the risk of ecological damage continuing unabated.

During research, we frequently witness things that challenge our moral values, but which are unrelated to our research. For example, we may see a local authority figure, who has offered us their support and protection, harming others. Or, we may view the treatment of women in the culture in which we work as demeaning. The options available when faced with such circumstances (e.g. do nothing, or speak out and risk repercussions for yourselves and others) can seem equally undesirable and unethical. Uncertainty about the best course of action to take

can result in significant ethical dilemma, even emotional trauma. Often there is no clear solution - the research contract does not prevent the researcher from intervening if it may alleviate suffering, yet this may affect future research relationships. Researchers must rely on their intuition and training to appropriately manage the situation. Seeking advice from supervisors or trusted neutral parties can be helpful.

Typically, conservation researchers collaborate with on-the-ground partners, who provide logistical, financial, political and moral support. However, these relationships can be ethically challenging to navigate: the aims of partners may differ from those of researchers. For example, a partner's primary interests may lie in conducting investigative research leading to convictions for illegal activity; actions typically beyond the scope of academic research. Research findings may not align with partners' prior assumptions, funding or policies, or generate evidence that reflects badly on their practices (e.g. Poudyal et al. 2018). Such findings are often vital to improve conservation outcomes, and withholding such findings could be considered unethical. Yet if shared inconsiderately, findings could cause embarrassment, endanger reputations, undermine working relationships and create hostility towards future researchers. Expectations between researchers and collaborators (e.g. NGOs and government departments) should be fully agreed in advance. When in place, 'Memorandums of Understanding' usually focus on intellectual property, financial management and reporting. However, we argue understanding each other's ethical positions on such issues and the implications for research outcomes should also become a core component of these agreements.

There are no simple solutions to many of the ethical dilemmas encountered during research.

While adhering to concepts of informed consent, 'do no harm' and the research contract, reminds us of our professional obligations, they can be difficult to operationalize, and don't necessarily identify the most ethical action, if any, to take. Some institutions offer ethics training to researchers, although this is optional rather than mandatory, or focused towards the ERB process rather than ethical decision-making during research. Researchers should never undertake field research without undergoing basic safety and first-aid training; failure to do so would be a dereliction of duty at the institutional level. We argue the same mind-set is required for ethics, to avoid placing researchers at the risk of doing, and suffering, psychological harm. Such training should promote reflexive thinking, whereby researchers engage in a process of critical reflection throughout their research. Reflexive thinking can allow researchers to recognise the effect the researcher has on the research (known as prospective reflexivity), or to consider the effect of the research on the researcher (known as retrospective reflexivity) (Attia & Edge, 2017).

Consciously identifying our moral values may be challenging - we may not consider our ethical positions as individuals, nor how this affects the way we behave and interpret behaviors around us. We advocate for training which guides researchers through the process of recognizing and identifying different values. We believe this will lead to better assessments of how knowledge is both generated and understood; enhancing researchers' consciousness about different ethical positions, alongside their own (Guillemin & Gillam 2004). Although researchers cannot predict or prevent ethical issues from arising, training can better equip conservationists with skills to negotiate ethical dilemmas when they arise; reducing the risk of psychological, emotional and physical stress, as well as researchers experiencing 'burn out' (Perry 2011).

## Power dynamics

Researcher and participant relations are central to how conservation knowledge is produced and legitimized. Power is the capacity of actors to affect the practices and ideas of others (Ribot & Peluso 2003). It is observed most clearly where conflicts of interest occur (Lukes 2005) and is both relational and relative: it occurs between actors, and varies between actors; some actors have more or less power than others. As such, power helps to determine how conflicts are resolved.

Conservation researchers may exercise power over participants through their ability to define research questions and methods, recruit participants, and suggest policy-relevant recommendations (Karnieli-Miller et al. 2009). As such, conservation research can create new, or reinforce existing power dynamics, either directly or via the implementation of the research recommendations (Sultana 2007; Kiik 2019). However, outcomes often result from a process of negotiation where different actors exercise power, rather than the fulfilment of the will of only one actor (Svarstad 2018). Conservation researchers may have substantial power over research participants and their communities, yet be relatively powerless in other scenarios (Sandbrook 2018).

Researchers are accountable to a range of stakeholders, whose interests are guided by their values and principles (Redpath et al. 2015). As such, researchers may become subject to the power of others and become ethically compromised if positioned between competing interests. For example, governments may insist their staff accompany a researcher as a condition for issuing a permit. Yet, government presence may undermine assurances of anonymity and

confidentiality, provoke distrust and jeopardize data quality.

Furthermore, research agendas may not align with the priorities of local organizations or communities. In such scenarios, research risks being imposed on communities without consultation, which is both unethical and rarely secures full cooperation. Research that fails to serve local interests can cause tension between researchers and participants, this becomes especially problematic when working with disempowered stakeholders, who may be unable to resist conservation policies (Brockington et al. 2006). To reduce power imbalances, we should consider participants as active agents in the research process, and recognize their contribution to knowledge generation in our research contract with them. 'Full partnership' approaches, which promote communities' continual participation, from research design, to data collection and result dissemination (Karnieli-Miller et al. 2009) aim to achieve this while increasing researchers' accountability to participants.

Conservation research can create positive power dynamics, whereby the researcher becomes a valuable external ally who can go beyond 'do no harm' and gives something back to participants, who may have less power than other actors. However, recruiting and working with research participants can also create new or reinforce existing, potentially negative, power dynamics within communities. Often, those able to act as mediators between researchers and participants (e.g. due to multi-lingualism) already hold positions of power. Working with these individuals potentially endows them with new knowledge, networks or resources; reinforcing their advantage over others in the community, especially if research involves sensitive topics such as illegal activity. Their presence may also affect data quality, as participants may feel

uncomfortable and unable to speak openly, particularly if their views encompass criticisms of local elites.

Finally, when collecting data from human participants, we must also recognize that power dynamics apply to conservation science as a discipline (Sandbrook 2018). Conservation has considerable influence in shaping how people relate to their social and ecological environments. Supported by a global conservation movement, conservation researchers can leverage significant financial, political and social resources, which often reinforce and legitimize the international conservation agenda (Sandbrook 2018). During research, participants may have heard different stories about the 'power' of conservation organizations, they may have previously experienced harm due to ill-considered conservation actions, and along with others, may be distrustful of engaging with researchers who represent conservation interests. In contrast, early-career researchers may feel relatively powerless to have meaningful ecological, social and scientific impact. Yet, we are situated in, and are the beneficiaries of, the same political and economic systems we are studying (Sundberg 2015). Reflecting on how we are positioned within the broader context (at all scales from global to study site) should improve understanding of how to use our power positively, rather than passively. We encourage researchers to consider their positionality, namely, how their race, class, age, gender, and geographic characteristics determine their research interests and outputs (Neely & Nguse 2015). This applies throughout our engagements in conservation discourse, from presenting at conferences, writing articles, to engaging with other stakeholders.

### **The legacy of research**

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When undertaking research, it is pertinent to remember that no action is without reaction. What researchers do, can significantly affect participants well-being, as well as the success of future conservation efforts. Researchers have a responsibility to consider how their work impacts participants, and the wider conservation movement at local, national and global levels. This responsibility applies to the framing of the original research contract with participants, the interpretation, publication and dissemination of results and beyond. Failure to consider the narratives adopted or how findings are framed, for example, can lead to the detrimental portrayal of the same people who helped facilitate research, with long-lasting ramifications (St John et al. 2016).

One particular challenge is the management of participants' expectations. Conservation has a reputation of negative extraction, where knowledge is collected and taken, but not shared with those who provided it (Barber et al. 2014). This extraction deprives participants of the opportunity to fully participate and erodes the quality of research, as findings remain unvalidated by those who know the study area best. As such, participants and their communities may become unwilling to engage in future research. Researchers should always provide feedback and ensure appropriate time and funding allocations are incorporated into research and grant proposals, and into the development of contractual agreements with participants.

Participants may provide information believing that it will result in economic development or immediate positive change to their lives. Their expectation that researchers can greatly improve the lives of participants may often be unrealistic. For example, we have been asked by remote

rural community members to help secure visas, or organize the installation of electricity distribution networks. Even if extensive efforts are made to inform participants that research will not provide instant or direct benefits, determining whether this has been understood and accepted can be challenging (Cronin-Furman & Lake 2018). Yet, failure to properly manage participants' expectations leads to disappointment, disenfranchisement and even antagonism.

Another issue is the responsibilities we have to those who assist research, including research assistants, translators, drivers, and community contacts. These individuals play a critical role in the success of research. Researchers may assume responsibilities to team members finish at the end of data collection, but team members may find themselves exposed to risk, or experience conflicts of interest between their obligations as an employee and their community long after the research period. Such risks can be compounded by team members' subordinate position relative to the research lead, which may result in acceptance of harmful decisions and practices (Cronin-Furman & Lake 2018). Team members are commonly employed informally, or on temporary contracts designed more to meet the needs of research, rather than offer employees protection (e.g. via health insurance, social security benefits). On the other hand, it is important to also recognize that in contexts where much employment is temporary or cash-in hand, formal employment contracts may be inappropriate. Instead, it may be better to work with team members to devise adequate and culturally appropriate solutions that guarantee proper remuneration.

Despite their essential role in research, institutional protocols do not adequately protect research team members. In our experience, ERBs rarely consider the wellbeing of research team

members, focusing on participants, while health and safety assessments focus on the research institutions' employees. When planning research, researchers should ensure risk assessments and research protocols address the ethical, physical and mental implications on all team members. This should include seeking free, prior and informed consent from team members using a locally-relevant format. After research completion, the contribution of each individual to the research output should be adequately recognized - co-authorship is an important component of epistemic justice (Sarna-Wojcicki et al. 2017). These matters should be discussed fairly, openly and where appropriate, be formalized, prior to research commencing to ensure contributions are acknowledged, and wishes are respected.

### **Future perspectives**

Human research ethics are vital for the applied and normative discipline of conservation science (Kareiva & Marvier 2012). However, ethical training and practice have not kept pace with the increasing prominence of research that involves human participants (Saltz et al. 2018). We have moral, pragmatic and legal obligations to act ethically and avoid harming others. However, it takes time, effort and money to follow ethical processes and requires researchers to engage with bureaucratic processes and attend training. Ethical standards constrain the types of research possible, and can limit access to certain groups, areas, methodologies and research questions. Moreover, thinking reflexively and acting ethically is challenging.

For many, the ERB process represents the first (and sometimes only) point at which ethical issues are considered. As ERBs become increasingly compulsory, we argue for a change in how our discipline engages with the ethical review process. Firstly, we must be aware of the limits of

the ethical procedures prescribed by ERBs, and the need to go beyond them in our own reflexive practice. Secondly, we must take greater responsibility for engaging with and improving the ERB processes. Conservation researchers with experience of the social sciences must opt to sit on ERB review boards and assist with ethical review applications where ethical review processes are insufficient. Thirdly, we must strive to achieve a deeper understanding of the ethical issues we may encounter during research, for example, by exploring the history and socio-political context of study sites and evaluating the effect of previous conservation efforts on participants receptivity towards researchers.

Academic journals could play a key role in incentivizing researchers to properly engage in ethical review processes through the mandatory requirement of ethical approval and reporting (St John et al. 2016; Ibbett & Brittain 2019), however this must be carefully implemented to not exclude researchers without access to ERBs. Ethics statement requirements in funding applications and reports to funders, may similarly incentivize non-academic conservation researchers. Ethical reporting could also be modified to encourage greater reflection from researchers. There is a move within conservation to acknowledge, reflect and learn from failure (Catalano et al. 2017). Publishing reflective discussions, whereby conservation researchers review the ethical issues they encountered or reflect upon how their positionality and values affect their interpretation of data, for example, would allow others to learn from previous experiences, and encourage an open dialogue on ethics, paving the way for further refinement of ethical practice in future. However, we must foster a supportive culture to enable early-career researchers to participate without jeopardizing careers.

Currently, few conservation-specific resources exist to guide ethical human research practice, and researchers resort to resources from other disciplines. Although conservation research has many similarities to other disciplines, the action-driven nature of our science means some issues are inadequately addressed. For example, guidelines in psychology describe how to manage human relations, yet rarely discuss issues related to power, except when dealing with vulnerable groups such as children (APA 2017). Further, while anthropology students receive ethical training, it emphasizes reflexivity and cultivation of ethical capacity, rather than following a set of prescriptive guidelines (AAA 2012), meaning they cannot be effectively adopted without training, as is sometimes advised (e.g. Woodhouse et al. 2016). A set of ethical guidelines for conservation researchers designed to complement formal ethical processes would serve to alert researchers to the issues they might encounter, and act as a blueprint for improved ethical practice. This could draw on similar documents produced in other disciplines, but must address the unique set of issues faced in conservation. Integration of rigorous ethical training into conservation education is essential for these guidelines to be adopted successfully.

This piece by no means represents a comprehensive discussion of all the ethical conundrums that occur when conducting conservation research with human participants. We focused our attention on limited examples from our own experiences, and we do not discuss other important ethical issues, such as reimbursing participants for their contributions, and moving beyond simply 'doing no harm' to generating reciprocal benefits for participants. We do not suggest that current conservation researchers are intentionally acting unethically, or even that researchers are breaking ethical protocols. However, we believe conservation must move beyond applying the standards set out by ERBs, towards a more holistic, ethical research practice.

As early-career conservation scientists, we are often on the 'frontline'. We begin our careers with field-based research, often entering sites with differing cultures, complex histories, and possibly social conflict over local environments. We have experienced how ethical shortfalls can evolve to negatively impact research participants, collaborators, ourselves and conservation outcomes, and have contended with the negative legacies left by conservationists before us. We believe our experiences are not uncommon, nor unavoidable. Looking forward, we want to ensure that this is not the legacy we leave. We hope our essay sparks discussion and contributes to a more socially just conservation.

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## References

- Aluwihare-Samaranayake D. 2012. Ethics in qualitative research: A view of the participants' and researchers' world from a critical standpoint. *International Journal of Qualitative Methods* **11**:64–81.
- American Anthropological Association. 2009. Code of Ethics. Available from <http://s3.amazonaws.com/rdcms-aaa/files/production/public/FileDownloads/pdfs/issues/policy-advocacy/upload/AAA-Ethics-Code-2009.pdf>
- American Psychological Association. 2017. Ethical principles of psychologists and code of conduct. Available from [https://www.apa.org/images/ethics-code-2017\\_tcm7-218783.pdf](https://www.apa.org/images/ethics-code-2017_tcm7-218783.pdf)
- Attia M & Edge J 2017. Be(com)ing a reflexive researcher: a developmental approach to research methodology. *Open Review of Educational Research*, **4**: 33-45. <https://doi.org/10.1080/23265507.2017.1300068>
- Barber PH et al. 2014 Advancing biodiversity research in developing countries: the need for changing paradigms. *Bulletin of Marine Science*, **90**: 187-210
- Bennett NJ, Roth R, Klain SC et al. 2016. Mainstreaming the social sciences in conservation. *Conservation Biology* **31**:56–66.
- Bennett NJ, Roth R, Klain SC et al. 2017. Conservation social science: Understanding and integrating human dimensions to improve conservation. *Biological Conservation* **205**:93–108.
- Brockington D, Igoe J, Schmidt-Soltau K. 2006. Conservation, human rights, and poverty reduction. *Conservation Biology* **20**:250–252.
- Carlson R V., Boyd KM, Webb DJ. 2004. The revision of the Declaration of Helsinki: past, present and future. *British Journal of Clinical Pharmacology* **57**:695–713.
- Catalano AS, Redford K, Margoluis R, Knight AT. 2017. Black swans, cognition and the power of learning from failure. *Conservation Biology*. **32**:584-596.
- Cronin-Furman K, Lake M. 2018. Ethics Abroad: Fieldwork in Fragile and Violent Contexts. *PS - Political Science and Politics* **51**:607–614.
- de Laine M. 2000. Ethical dilemmas: the demands and expectations of various audiences. Pages 120–145 *Fieldwork, participation, and practice: Ethics and Dilemmas in qualitative research*. Sage Publications, London, UK.
- Dyer S, Demeritt D. 2009. Un-ethical review? Why it is wrong to apply the medical model of research governance to human geography. *Progress in Human Geography* **33**:46–64.

- Duffy R et al. 2019. Why we must question the militarization of conservation. *Biological Conservation*, **232**:66-73.
- ESRC. 2015. Research Ethics. Available from <https://esrc.ukri.org/funding/guidance-for-applicants/research-ethics/> (accessed August 11, 2018).
- Fairhead J, Leach M, Scoones I. 2012. Green Grabbing: a new appropriation of nature? *Journal of Peasant Studies* **39**:237–261.
- Fox HE, Christian C, Nordby JC, Pergams ORW, Peterson GD, Pyke CR. 2006. Perceived barriers to integrating social science and conservation. *Conservation Biology* **20**:1817–1820.
- Guillemin M, Gillam L. 2004. Ethics, reflexivity, and ‘Ethically important moments’ in research. *Qualitative Inquiry* **10**:261–280.
- Hayward MW, Callen A, Allen BL et al. 2019. Deconstructing compassionate conservation. *Conservation Biology*. **33**:760-768
- Ibbett H, Brittain S. (2019). Conservation publications and their provisions to protect research participants. *Conservation Biology*.
- Kareiva P, Marvier M. 2012. What Is Conservation Science? *BioScience* **62**:962–969.
- Karnieli-miller O, Strier R, Pessach L. 2009. Power Relations in Qualitative Research. *Qualitative Health Research*:279–289.
- Kiik L. 2019. ConservationLand: Towards the anthropology of professionals in global nature conservation. *Critique of Anthropology*. <https://doi.org/10.1177/0308275X18821177>
- Lewis J. 2016. ‘Our life has turned upside down! And nobody cares.’ *Hunter Gatherer Research* **2**:375–384.
- Lewis, J., Freeman L, Borreill S. et al. 2010. ‘Free, Prior and Informed Consent: Implications for Sustainable Forest Management in the Congo Basin.’ In *Governing Africa’s Forests in a Globalised World*. Edited by Laura German, Alain Karsenty and Anne-Marie Tiani. Earthscan: London, pp 319-331.
- Lukes S. 2005. *Power: A Radical view*. (Second edition) London, Palgrave.
- Lunn J. 2014. *Fieldwork in the Global South. Ethical challenges and dilemmas*. Routledge, Abingdon, UK.
- Mascia MB et al. 2003. Conservation and the Social Sciences. *Conservation Biology* **17**:649–650.
- Minteer BA, Collins JP. 2005. Ecological ethics: Building a new tool kit for ecologists and biodiversity managers. *Conservation Biology* **19**:1803–1812.

Neely A, Nguse T. 2015. Relationships and research methods. Page in J. M. Tom Perreault, Gavin Bridge, editor. *The Routledge Handbook of Political Ecology* first edit. Routledge.

Newing H. 2011. *Conducting Research in Conservation. A social science perspective*. Taylor & Francis, Abingdon, UK.

Newing H, Perram A. 2019. What do you know about conservation and human rights. *Oryx* **53**:595-596.

doi: <https://doi.org/10.1017/S0030605319000917>

Palmer J, Fam D, Smith T, Kilham S. 2014. Ethics in fieldwork: Reflections on the unexpected. *Qualitative Report* **19**:1-14.

Parks T. 2008. The rise and fall of donor funding for advocacy NGOs: understanding the impacts. *Development in Practice*. **18**:213-223

Payne G, Payne J. 2004. Objectivity. in *Key Concepts in Social Research*. Sage publications Ltd. <http://dx.doi.org/10.4135/9781849209397>

Peluso NL. 1993. Coercing conservation? The politics of state resource control. *Global Environmental Change* **3**:199-217.

Perry JE. 2011. Managing moral distress: A strategy for resolving ethical dilemmas. *Business Horizons* **54**:393-397. 'Kelley School of Business, Indiana University'.

Poudyal M et al. 2018. Who bears the cost of forest conservation? *PeerJ* **6**:e5106.

Redpath SM et al. 2013. Understanding and managing conservation conflicts. *Trends in Ecology & Evolution* **28**:100-109.

Redpath SM, Gutierrez RJ, Wood KA, & Young JC. 2015. *Conflicts in Conservation*, Cambridge University Press.

Robinson JG. 2011. Ethical pluralism, pragmatism, and sustainability in conservation practice. *Biological Conservation* **144**:958-965.

Saltz D, Justus J, Huffaker B. 2018. The crucial but underrepresented role of philosophy in conservation science curricula. *Conservation Biology*:1-10.

Sandbrook C. 2018. Weak yet strong: the uneven power relations of conservation. *Oryx* **51**:379-380.

Sandbrook C, Adams WM, Büscher B, Vira B. 2013. Social Research and Biodiversity Conservation. *Conservation Biology* **27**:1487-1490.

Sarna-Wojcicki D, Perret M, Eitzel M V., Fortmann L. 2017. Where Are the Missing Coauthors? Authorship Practices in Participatory Research. *Rural Sociology* **82**:713-746.

Schultz PW. 2011. Conservation Means Behavior. *Conservation Biology* **25**:1080–1083.

Speigman R, Spear P. 2008. The Role of Institutional Review Boards: Now you see them, now you don't. *The Handbook of Social Research Ethics*:121–134.

St John FAV, Edwards-Jones G, Jones JPG. 2010. Conservation and human behavior: Lessons from social psychology. *Wildlife Research* **37**:658–667.

St John FAV et al. 2016. Research ethics: Assuring anonymity at the individual level may not be sufficient to protect research participants from harm. *Biological Conservation* **196**:208–209.

St John FAV, Keane AM, Jones JPG, Milner-Gulland EJ. 2014. Robust study design is as important on the social as it is on the ecological side of applied ecological research. *Journal of Applied Ecology* **51**:1479–1485.

Sultana F. 2007. Reflexivity, positionality and participatory ethics: Negotiating fieldwork dilemmas in international research. *Acme* **6**:374–385.

Sundberg J. 2015. Ethics, entanglement and political ecology. Pages 117–127 in J. M. Tom Perreault, Gavin Bridge, editor. *The Routledge Handbook of Political Ecology*. Routledge.

Tilman D, Clark M, Williams DR, Kimmel K, Polasky S, Packer C. 2017. Future threats to biodiversity and pathways to their prevention. *Nature* **546**:73–81.

Valentine G. 2005. Geography and ethics: Moral geographies? Ethical commitment in research and teaching. *Progress in Human Geography* **29**:483–487.

Vanclay F, Baines JT, Taylor CN. 2013. Principles for ethical research involving humans: ethical professional practice in impact assessment Part I. *Impact Assessment and Project Appraisal* **31**:243–253.

Von Essen E, Hansen HP, Nordström Källström H, Peterson MN, Peterson TR. 2014. Deconstructing the poaching phenomenon. *British Journal of Criminology* **54**:632–651.

Wallach AD, Bekoff M, Batavia C, Nelson MP, Ramp D. 2018. Summoning compassion to address the challenges of conservation. *Conservation Biology* **32**:1255–1265

Wiles R. 2013 *What are Qualitative Research Ethics?* Bloomsbury Academic, London.

Woodhouse E, de Lange E, Milner-Gulland EJ. 2016. *Evaluating the impacts of conservation interventions on human well-being. Guidance for practitioners.* London.

Table 1. Summary of key issues identified by workshop attendees as a cause of ethical concern.

Assigned category refers to the section of the essay in which we address this.

Ethical challenge encountered	Section where challenge discussed
Inappropriate and irrelevant institutional ethics procedures – when researchers have to comply with procedures which make less sense in their research context	Institutional Ethical responsibilities
How to conduct yourself in the context of illegal activities – witnessing/learning of illegal activities. Navigating the line between being a researcher vs an informant	Conflicting values
Who should research be serving? Participants? Researchers? Funders?	
Conducting research in contested spaces where conservation is not perceived as ‘a good thing’	
Managing participant expectations - honesty, transparency and humility – Is it fair to conduct research when it may have little immediate or direct benefit for participants?	
Poor prior knowledge of culture and pre-existing conflicts when arriving, which you may become drawn into	Power dynamics
Research permits – accompaniment/monitoring by government or NGO’s, dilemmas over who researchers are accountable and responsible to	
Mistrust that arises between different actors	
Consideration of the narratives we adopt when discussing findings – how narratives reinforce stereotypes	Research legacy
Effect of past researchers on your research – overcoming reticence from participants because previous researchers have practiced poorly	
Protecting the research team, and fairly and equitably recognising their research contribution	
Perpetuating inequality by failing to address power dynamics	