

Challenges and supports for women conservation leaders

Megan S. Jones  | Jennifer Solomon

Human Dimensions of Natural Resources
Department, Colorado State University, Fort
Collins, Colorado

Correspondence

Megan S. Jones, Human Dimensions of
Natural Resources, Colorado State
University, 1480 Campus Delivery, Fort
Collins, CO 80523-1480.
Email: ms.jones@colostate.edu

Funding information

Colorado State University Libraries Open
Access Research and Scholarship; Human
Dimensions of Natural Resources
Department at Colorado State University

Abstract

Leadership and inclusivity are increasingly recognized as fundamental to conservation success, yet women's leadership within the conservation profession is understudied. This study identifies gender-related challenges women conservation leaders experienced in their careers, and supports helping them advance. Using an intersectionality framing to identify intersections between gender, race/ethnicity, age, and leadership position, we conducted and analyzed semi-structured interviews with 56 women leaders in conservation organizations across the United States. All interviewees reported experiencing or witnessing a gender-related workplace challenge in at least one of six categories, and the vast majority reported encountering four or more of these challenges: salary inequality and difficulty negotiating, formal exclusion, informal exclusion, harassment and inadequate organizational response, assumptions of inadequacy, and assumptions of wrongness. Participants also experienced two categories of supports: structural supports and supportive relationships. Women's experiences varied based on age, race and ethnicity, and leadership position. Our results indicate more effort is needed to identify effective strategies for making conservation a more inclusive, empowering, and appealing profession in which to work.

KEYWORDS

conservation, equity, gender, inclusivity, intersectionality, leadership, organizational management, semi-structured interviews, women

1 | INTRODUCTION

Inclusive, diverse leadership is increasingly recognized as fundamental to conservation success. Conservation scientists and practitioners have argued that the profession will more effectively protect biodiversity if it includes different genders, races, ethnicities, and cultures (Tallis & Lubchenco, 2014) and represents a plurality of values and viewpoints (Matulis & Moyer, 2016). Including local women as knowledge-holders and decision-makers in community-based conservation has been linked to improved outcomes globally in protected area management (Allendorf &

Allendorf, 2012), community forest governance (Agarwal, 2009), fisheries management (Leisher et al., 2015), climate change mitigation (Larson et al., 2015), and water conservation (Kevany & Huisingsh, 2013). Women have also been influential leaders of grassroots environmental activism campaigns at local, national, and international scales (Bell & Braun, 2010). However, women's representation in leadership positions within the conservation profession itself has been understudied in peer-reviewed literature. This study aims to address this by extending the research on conservation leadership to analyze women's experiences of gender-related challenges and supports.

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2019 The Authors. Conservation Science and Practice published by Wiley Periodicals, Inc. on behalf of Society for Conservation Biology

Any discussion about leadership and gender must recognize that gender inequalities operate within many socially constructed systems of privilege that control individuals' access to power, knowledge, and resources (Johnson, 2006). Intersectionality theory (Crenshaw, 1991) is a framework to investigate how intersecting axes of social difference—including gender, race, ethnicity, class, age, sexuality, and disability—combine to shape people's heterogeneous experiences (Healy, Bradley, & Forson, 2011). In this study we employ an intersectional framing to understand how women conservation leaders' experiences of gender-related challenges interweave with race and age at different levels within organizational hierarchies. In so doing we combine literature on workplace gender inequality with research by feminist political ecologists such as Sundberg (2004, p. 61), who calls for studies “to examine if and how conservation, conservationists... and researchers are implicated in the (re)production of unequal social relations in the daily discourses, practices, and performances of conservation.”

A plethora of evidence of gender inequality exists across U.S. society. Women were historically excluded from many leadership positions, and gender parity has yet to be reached at the top of many occupations: women comprise 33% of full professors, 20% of U.S. Congress people, and 6% of Fortune 500 company chief executive officers (CEOs) (Center for American Woman and Politics, 2018; Snyder, Brey, & Dillow, 2018; Zarya, 2017). In conservation, research on a subsection of U.S.-based organizations suggests women occupy most junior positions, for example, internships, but fewer senior positions such as executive directors (Taylor, 2015), and that White women fill more senior leadership roles than women of color, who also navigate racial inequalities (Taylor, 2014).

It has been extensively demonstrated that gender imbalance at the tops of organizations derives at least partially from pervasive gender prejudice and discrimination. Gender discrimination occurs when “women receive fewer leadership opportunities than men even *with equivalent qualifications*” (Eagly & Carli, 2007, p. 67, emphasis in original), and is rooted in prejudice “result[ing] from the mismatch between the stereotyped attributes that people ascribe to a group and those they ascribe to a particular social role” (Eagly & Carli, 2007, p. 96). Prejudice against women leaders thus derives from people's divergent expectations of leaders and women, and manifests in resistance to women's leadership. Working women often receive less approval than men for the same behaviors, and less support, mentorship, respect, and recognition (McClean, Martin, Emich, & Woodruff, 2017); experience sexually harassment (McLaughlin, Uggen, & Blackstone, 2012); and struggle to appear both competent and warm (Eagly, 2007). Gender discrimination manifests in unequal salary, hiring, and promotion processes

(Moss-Racusin, Dovidio, Brescoll, Graham, & Handelsman, 2012). In this paper we use the term “gender-related challenges” to encompass these difficulties.¹

Various supports have been identified that can strengthen women's professional leadership. These include transformed hiring practices, organizational analyses of diversity, equity, and inclusion (DEI), trainings, mentoring programs, role models, championing by senior leaders, women's groups, and peer support. The utility of different support structures has been extensively debated, especially regarding how women's needs vary with inequalities of race, class, and age (Healy et al., 2011) and the tensions between organizations' responsibilities to change and expectations placed on women to navigate unequal systems by themselves (Van Oosten, Buse, & Bilimoria, 2017). These types of support structures can be beneficial to all employees, but are widely recognized as being particularly necessary for people who are disadvantaged in the workplace by social, political, and economic systems of privilege such as gender, as well as race/ethnicity, class, disability, and so on (Shore, Cleveland, & Sanchez, 2018).

Gender equality is considered a human right by the United Nations, and gender diverse leadership correlates with high managerial performance (Dezsö & Ross, 2012), increased organizational profit (Litz & Folker, 2002), and improved employee well-being (Melero, 2011). Gender diversity has been linked to effective conservation: an international comparative study of 46 natural resource management groups found women's participation was associated with significantly more collaboration, reciprocity, persistence, and conflict resolution (Westermann, Ashby, & Pretty, 2005). Similarly, a 10-year study of Fortune 500 companies found companies with women CEOs and on the Board of Directors pursued more environmentally friendly business strategies than those with fewer women (Glass, Cook, & Ingersoll, 2015). The central role women play in protecting biodiversity and preventing climate change at all decision-making levels has been recognized by international targets such as the Convention on Biological Diversity (Alvarez & Lovera, 2016). Given these implications, it is crucial to assess the current situation in the conservation profession. With that aim, we investigated U.S.-based women conservation leaders' perceptions of how gender roles have constrained their careers, and what supports helped them advance.

2 | METHODS

2.1 | Data collection

Interview participants were identified using snowball sampling, beginning with a seed group drawn from the authors' professional networks (Newing, 2011). Participants met five inclusion criteria: self-identify as a woman, be currently

based in the United States, work for an organization with a conservation mission, be employed in a leadership role, and have a natural and/or social science background. Using a positional definition of leadership (Bruyere, 2015), participants were considered conservation leaders if they occupied midlevel to senior leadership positions (e.g., scientist/program coordinator through superintendent/executive director). Through these parameters we sought to understand how women occupying central and influential roles felt constrained or empowered within their organizations.

Reflecting our grounding in intersectionality theory, we used purposive sampling to solicit greater participation from women of color, who often encounter distinct challenges given their positions at multiple intersecting axes of discrimination (Crenshaw, 1991). We also used purposive sampling to reach participants of diverse ages, located across the U.S., working at various leadership levels, and based in different organizational types. Interviews were conducted until saturation was reached, that is, additional interviews contributed few novel insights (Newing, 2011).

Potential participants were contacted via email. We contacted 110 women, 79 of whom responded. Ultimately 63 women were interviewed. Interviews were conducted in person (19%), over the phone (44%), and via Skype (37%) from June to September 2016, lasted 45–90 min (averaging 58 min), and were transcribed by the first author and a research assistant. Participants gave verbal informed consent and were informed that their interview would be redacted of personally identifiable information and that they could withdraw from the study at any time.

Semi-structured interview questions (see Supporting Information), derived from a literature review, focused on participants' experiences of gender-related challenges throughout their conservation careers, and supports to overcome those challenges. Demographic information was collected on participants' age, education, race/ethnicity, marital status, children, and location.

2.2 | Data analysis

Interviews were analyzed using grounded theory, a systematic methodology for identifying emergent themes and incorporating them into theoretical models (Charmaz, 2014). We first parsed the interviews into concepts (i.e., specific challenges and supports) using initial coding and then, based on comparisons across the transcripts, clustered these concepts into categories using focused coding. Memos were kept throughout. To mitigate acquiescence bias, participants were coded as having experienced particular challenges or supports only when they expounded on their experience (Newing, 2011). Combining grounded theory driven analysis with a deductively developed interview guide allowed us

to contextualize the data within the wider intersectionality literature on working women and leadership while allowing for participants' unique conservation experiences. In our analysis we focused particularly on connections participants made between their race/ethnicity, age, leadership level, organization type, and gendered experiences.

3 | RESULTS

3.1 | Characteristics of the participants

Fifty-six interviews qualified for analysis based on the inclusion criteria.² At the time of the interviews 15 participants worked for federal agencies, five for state agencies, 31 for nongovernmental organizations (NGOs), and five for other conservation organizations. Three participants self-identified as African American, one as African American-Hispanic, one as Asian American, four as White-Hispanic, and 47 as White non-Hispanic (16% of color, 84% White). Participants' aged ranged from 26 to 64 (median age 44) and were based in 19 U.S. states.

3.2 | Gender-related challenges in the conservation workplace

We derived six categories (see Figures 1–3) of gender-related challenges that participants had perceived experiencing in the conservation workplace. All participants reported experiencing or witnessing a gender-related challenge in at least one category while working in conservation; the vast majority reported experiencing or witnessing a gender-related challenge in four or more of the six categories.

3.2.1 | Salary inequality and difficulty negotiating

Encompasses women conservation leaders' experiences being paid less than men and/or struggling to negotiate effectively (Figure 1). Some participants working at NGOs lamented that their organization provided no transparency about salaries, while others at agencies noted mandatory salary transparency merely allowed them to ascertain they were being paid less than male colleagues. Some stressed that even when equity adjustments are made, a legacy of inequality endures: as Participant 19 wondered, “how many years have I been being underpaid?”

3.2.2 | Formal exclusion

Captures women conservation leaders' experiences being denied opportunities to advance or seeing other women denied advancement, particularly by being passed over for

CATEGORY	ATTRIBUTES	EXEMPLARY QUOTES
Salary Inequality & Difficulty Negotiating	Women are paid less than male colleagues at the same level	“So you can go online and look up people's salaries [...] I was the lowest paid person in my job class in my last job, and I'm the one of the lowest paid people in my job now.” (Participant 57)
	Women feel unequipped to negotiate	“I also didn't even enter this job knowing things like negotiating my salary, or that I could.” (Participant 5)
	Organizations fail to assess or address gendered salary inequality	“Literally, her [the HR representative's] mouth dropped open and she was like, 'I cannot believe you are making so little, why are you at this level?' and I was like 'I do not know!' There is no transparency in how salaries are set.” (Participant 20)
Formal Exclusion	Women do not receive promotions	“They sent a very loud message of, 'no we don't really want you up here.' Even though I was obviously leaps and bounds the most qualified to do that job. And that hurt.” (Participant 54)
	Men are promoted more quickly than women	“I also just don't think women get moved up as quickly. Even if they're doing the same level of work [...] Men, I feel like, would get the bump [up] before they took on more responsibility.” (Participant 10)
	Less competent men are hired in over more competent women, rather than promoting the women	“[He is] being promoted to potentially be the lead of this topic for which my [female] colleague is much, much, much, much more qualified. I mean he basically has no qualifications for that role.” (Participant 22)
Informal Exclusion	Women are not invited to (or not present in) decision-making spaces	“To me that is what the old boys' [club] is, it's like these informal side conversations where people are making huge decisions that are then brought back to the table without collaborative, collective decision-making.” (Participant 39)
	Women are talked over, interrupted, or not invited to talk in meetings with men	“I have heard from other women who have had higher positions than me – you know, Ph.D.'s, well-respected, very accomplished, that they have had the experience where in a meeting, men talk over them a lot, interrupt them a lot, take credit for their ideas.” (Participant 47)
	Men restate women's ideas and receive recognition for the idea that the women do not	“When I first started the last job there was a lot of ganging up against the few female employees that there were, a lot of them didn't last. A lot of 'you can make my coffee, you can make my photocopies' and it was like, 'I'm actually the biologist here' [laughs].” (Participant 57)
	Men ask women to do administrative tasks that are not part of the women's leadership roles	

FIGURE 1 Gender-related challenges experienced by women conservation leaders: Salary inequality, formal exclusion, and informal exclusion

promotions (Figure 1). Participants at NGOs, and federal and state agencies offered recent examples of men in senior leadership positions promoting more junior men over well-qualified women. Several participants noted this seemed most common in senior leadership.

3.2.3 | Informal exclusion

Comprises occasions when women are denied opportunities to participate in decision-making, such as being excluded from scientific and leadership tasks (Figure 1). Many

CATEGORY	ATTRIBUTES	EXEMPLARY QUOTES
Harassment & Inadequate Response	Women experience sexual harassment, i.e. unwelcome sexual talk or behavior from male supervisors and colleagues	<i>“It’s certainly something that has come up for younger [female] colleagues of mine who are potentially in direct supervision relationships with older males who – and it’s more of an inappropriate language, and maybe the supervising individual doesn’t even realize that they’re making someone feel <u>very</u> uncomfortable.” (Participant 7)</i>
	Women experience verbal or physically threatening behavior from male supervisors and colleagues	<i>“There was a man who was purported to punch a hole in the drywall next to a woman’s head and he didn’t get fired. I’m not even sure he got reprimanded.” (Participant 43)</i>
	Women do not report incidents because of a fear of retaliation or a belief that reporting will not lead to change	<i>“I’ve thought about reporting it and then I was like, why? He won’t be held accountable for change. It would be on me, and it would be something like, ‘you need to take that less personally’.” (Participant 9)</i>
	Women who do report harassment experience retaliation from colleagues or supervisors	<i>“It was definitely not like a ‘good for her for standing up for herself.’ It was more of like a, ‘wow, what a troublemaker, couldn’t she have handled that herself’.” (Participant 37)</i>
	Organizations do not take action when an incident is reported	<i>“There were some harassment issues, of a male harassing a female, at [location redacted]. And the person in charge, the supervisor, was a male, and then the next supervisor was a male, and so the issue never got taken care of.” (Participant 17)</i>
	If organizations do take formal action, women believe it is not sufficient	<i>“And how it’s been handled – well it appears that there may have been a settlement here or there [...] but is it really solved? I doubt it, because I think that individual is still around.” (Participant 32)</i>
	Harassment policies and reporting mechanisms are only put into place after an organizational harassment scandal	<i>“[We] had a really huge sexual harassment scandal this past winter and spring and so since then, they have totally overhauled their policies.” (Participant 61)</i>

FIGURE 2 Gender-related challenges experienced by women conservation leaders: Harassment and inadequate organizational response

participants stressed that this occurred across positional and generational power imbalances, with more senior men excluding more junior women and/or older men excluding younger women, while others noted that informal exclusion still occurs despite them having attained senior leadership positions. Participants of color noted informal exclusion that White participants did not, with all but one describing a sense of isolation being the only, or one of the only, people of their race/ethnicity at their organization and in most conservation spaces. Many reported that colleagues tended to exacerbate this through direct comments (positive or negative) and requests that they take on additional DEI work. Participant 39 explained that White women might struggle to sit at the conservation table, but

“for women of color—we haven’t even stepped into the building.”

3.2.4 | Harassment and inadequate organizational response

Encapsulates women conservation leaders' accounts of being harassed and/or sexually harassed at work, and organizations tacitly tolerating this (Figure 2). Many participants emphasized that this occurred across asymmetries in formal and age-related authority, through which older men in senior leadership roles harass younger, more junior women. Some participants in their 40s and 50s reported that although they were no longer objects of harassment, they were still

CATEGORY	ATTRIBUTES	EXEMPLARY QUOTES
Assumption of Inadequacy	Men disbelieve or are surprised at women's successes	<i>"They'll still be surprised like, 'oh, you got that job?! Really!' You'll be like, 'yeah, I did, why are you surprised? [...] you're surprised because I'm a woman,' and it – it's just insidious, it just is. But then you keep being battered by it along the way [...] the impact of that is like, 'woah, maybe I shouldn't have gotten that job'."</i> (Participant 45)
	Men assume that women cannot be the authority figure in a given situation	<i>"Especially in the field sciences, being out in the field [...] I have been in situations where men assumed that the women scientists wouldn't be able to do as much as the men scientists, or that they shouldn't be in charge of certain tasks."</i> (Participant 18)
	Male employees or colleagues challenge women's right to be in a leadership position	<i>"I go into a lot of situations knowing, 'Okay, I'm going to be with all men, and I have to be on my game' because they are going to look at you as less than equal, that's a given."</i> (Participant 33)
	Women strive not to fail, because they perceive every mistake counts against them	<i>"I definitely encountered a lot of people that either outright told me that I shouldn't be where I was or that they didn't believe that I could do the work, or it was pretty obvious that that was the case, and you had to make sure that people saw that you were competent."</i> (Participant 55)
	Women feel they have to work harder than men	<i>"Most women that I know who are very high-level conservation professionals are super organized, super dedicated, go above and beyond – you know, and some of the men who are in leadership positions, they can't even like keep a calendar straight."</i> (Participant 34)
Assumption of Wrongness	Women who claim authority by being assertive are perceived negatively and critiqued by their colleagues and supervisors	<i>"She was brilliant and incredibly assertive – everyone hated her. Other people that were brilliant and incredibly assertive that weren't women, didn't have that level of, you know, negativity surrounding them."</i> (Participant 37)
	Women who do not behave assertively are told to be more assertive	<i>"The number of times I've been told by my predecessors or the kind of community here in [location redacted] that I'm not fierce enough or I'm not loud enough or I'm not assertive enough or I'm not aggressive enough..."</i> (Participant 45)
	Women are seen as being the wrong age: too old, young, or middle-aged	<i>"He was like, 'are you sure you're old enough to be here?' [laughs]"</i> (Participant 27)
	Women are perceived as being too overtly feminine to do their job	<i>"I would never wear high heels to a conservation conference [...] it's a judgment of, you know, that's – that means that you're not serious about this work and you're not ready to get out in the field and you know, do what needs to be done."</i> (Participant 7)

FIGURE 3 Gender-related challenges experienced by women conservation leaders: Assumption of inadequacy and assumption of wrongness

sometimes expected to listen to male colleagues' sexual comments about other women. Several mentioned that sexual harassment was more egregious when doing fieldwork.

3.2.5 | Assumption of inadequacy

Encompasses an underlying impression, suggested by men's (and occasionally other women's) statements and actions, that they believe women are incapable of doing conservation science and/or being conservation leaders (Figure 3). Race and ethnicity intersect with gender here: two participants of color reported comments from others demonstrating their assumption that women of color are not (and cannot be) conservation leaders. Participant 61 explained: "most of the time people just don't think that I'm a scientist." Many participants reported experiencing this assumption predominantly when they were younger and less senior, while others experienced it throughout their career. Several observed how men assume women lack fieldwork skills, such as changing truck tires, driving boats, or identifying birds (Participants 8, 56, 11).

3.2.6 | Assumption of wrongness

Encompasses an underlying impression, suggested by men's (and occasionally other women's) statements and actions, that they believe women are unfit for conservation leadership (Figure 3). Many participants underscored the tension in conservation science between femininity and fieldwork. To appear feminine is to undermine one's credibility as a field scientist, and downplaying one's femininity feels particularly important for younger women, whose credibility may already feel jeopardized by gender and age. Two participants of color stressed the difficulty of disentangling multiple marginalities of race/ethnicity and gender when others assume they are too young to lead. Several participants in their 40s and 50s also noted they are "discounted" for being older (Participant 45). Finally, many participants highlighted that women of all ages and leadership levels struggle to be both assertive and well-liked.

3.3 | Supports mitigating gender-related challenges in the conservation workplace

We derived two categories comprising the professional supports that participants described as most meaningful for overcoming obstacles and advancing in their careers (Figure 4).

3.3.1 | Structural supports

Encompasses formal opportunities offered by conservation organizations, societies, and fellowships, and structural

changes adopted by conservation organizations. Formal opportunities include mentoring programs, coaching, and trainings in DEI, leadership, and resilience. Structural changes entail efforts by organizations to improve the workplace for women, including assessing diversity, improving harassment policies, and evaluating salaries. Several participants who stressed the benefits of organizational trainings were based at federal agencies, while one worked at a big international NGO (BINGO). Others at BINGOs lamented the lack of funding for leadership development. A few participants suggested that formal opportunities became more accessible as they advanced in rank, but are not always visible: "the resources are there if you ask. Do you know that you can ask? Like, I didn't know!" (Participant 10).

3.3.2 | Supportive relationships

Includes relationships with leaders (advisors, supervisors, upper management, and mentors) and peers (colleagues across organizations). Most participants stressed five categories of important behaviors that leaders of all genders could adopt: provide opportunities, learn women's individual needs, give feedback and guidance, connect women to their networks and champion their work, and demonstrate confidence in women, thus building women's own self-confidence (see Figure 4 for illustrative quotes). Women leaders specifically were described as providing additional support by being role models: "Seeing women who are competent and in leadership positions is really important too. You can make your own way, but it's definitely harder if you don't see where you can get" (Participant 68). Participants of color emphasized that role models and mentors of their own race/ethnicity are particularly helpful—but often difficult to find. Participants also described support from peers who share experiences of workplace challenges, and men who demonstrate their belief in gender equality. Both leaders and peers provide support by being trustworthy people with whom participants could have honest conversations. Although participants mentioned that some younger male colleagues seem more egalitarian than older men, many underscored that they believe inclusive leadership by older people is essential because of these leaders' greater positional power within organizations.

4 | DISCUSSION

The six categories of gender-related challenges emerging from our analysis suggest women conservation leaders navigate various forms of gender inequality in the conservation workplace. In our sample gender biases spanned many arenas—including organizational structures, supervisor-supervisee relationships, and interactions with colleagues—

CATEGORY	ATTRIBUTES	EXEMPLARY QUOTES
Structural Supports	Formal opportunities for women to gain skills	<i>“What’s been really helpful is participating in some leadership trainings, some really good ones, and then I think that taught me the skill to seek a mentor, to seek mentors or to seek assistance where I probably wouldn’t have done it.” (Participant 53)</i>
	Structural changes to make organizations more gender equitable	<i>“Having the sexual harassment support system, having that in place [...] then you can be a fully confident, competent woman in your job, and you don’t have to worry about will I lose my job, [...] being so careful.” (Participant 68)</i>
Supportive Relationships	Leaders who:	<i>“The [male boss] was a wonderful mentor to me and really gave me opportunities to grow and to learn and took me into his confidence and made me sort of his right hand person, and I just grew leaps and bounds in that experience just because he believed in me and just gave me opportunities.” (Participant 40)</i>
	Provide opportunities	
	Learn women’s individual needs	<i>“So it’s not just about having the right mentors to interact with, and role models, but also people who you’re responsible to who have the capacity, for everybody they supervise, to kind of understand them as an individual and figure out how to equip them to be successful.” (Participant 13)</i>
	Give feedback and guidance	<i>“What is most helpful for me is having someone who can work with me pretty regularly, so either a direct boss that’s a woman that is really focused on my advancement, or a close colleague, because they can catch the sort of day to day things or decisions that we make, that we could be making in a better way to promote ourselves or advance our positions.” (Participant 42)</i>
	Connect women to their networks and champion their work	<i>“I watch her in action, and she’d always promote me and make sure I had exposure and experience and opportunity and always introducing me, just very cognizant. She was a great role model on how to be a good mentor. She still is.” (Participant 62)</i>
	Demonstrate confidence in women, thus building women’s self-confidence	<i>“Just people believing in me. People that made me feel like I could do it, or assumed that I could do it. I think that made a big difference for me, just sort of have that and these other things are just kind of smaller little bumps then, and don’t become big barriers for you.” (Participant 59)</i>

FIGURE 4 Supports experienced by women conservation leaders: Structural and relational

and were experienced by women of various ages, working in diverse organizations, and from junior leadership to executive roles. Women of color reported struggling with race-related informal exclusion and assumptions of inadequacy. Young women encountered more sexual harassment than

older women, particularly from older and more senior men, assumptions of inadequacy, and perceptions that femininity is incompatible with field science competence. More senior women reported obstacles to formal promotion. These results corroborate research on women's workplace

leadership experiences in STEM and other professions in the United States, and are indicative of widespread sociocultural constructions of gender roles whereby women are often perceived as unfit for or incompatible with leadership, and treated accordingly (Eagly & Carli, 2007; Purcell, MacArthur, & Samblanet, 2010).

Questions remain about whether and how these patterns are changing. Many older White participants reported experiencing fewer gender-related challenges as they gained age, experience, and seniority, but complex interactions between these factors preclude easy explanations of causality. Some participants of color emphasized that efforts to increase gender equality in conservation do not automatically transition to racial equality unless race is specifically considered, an observation reinforced by previous research (Bowser, Roberts, Simmon, & Perales, 2012). Participants also described many supports helping them advance that may transform conservation workplaces. Some support structures are issue-specific, such as organizational investigations into salary inequity and sexual harassment. Others, such as leadership and DEI trainings, are more comprehensive efforts to change institutional culture and empower individuals. Supportive relationships with peers and leaders, but particularly those in senior positions, were seen as critical for increasing women's access to opportunities, building women's skills and confidence, normalizing women's representation in senior leadership, and creating inclusive conservation workspaces. These supports may also be useful to all people, regardless of gender. However, these findings reflect the wider literature, where mentorship and inclusivity specifically have been shown to benefit women leaders to help address gender imbalances such as men's tendency to have greater self-confidence than women, and men's disproportionate access to benefits from homophilous (i.e., based on shared characteristics) social networks with more senior male leaders (Purcell et al., 2010; Schipani, Dworkin, Kwolek-Folland, & Maurer, 2009).

Questions remain about whether and how workplace gender inequality undermines conservation's ability to achieve its goals of biodiversity protection and ecological stewardship (Matulis & Moyer, 2016; Tallis & Lubchenco, 2014). The challenges identified here may limit women conservationists' leadership directly, if they are promoted less frequently than men, or indirectly, if they are perceived as less competent or less fitted for leadership. They may also erode women's confidence or lead them to perceive workplaces to be unfair, unwelcoming, or unsafe. For instance, a Department of the Interior study suggests many employees who experience workplace harassment report that it damages their working relationships, undermines their well-being, impairs their work, and prompts them to attempt to leave their job (CFI Group, 2017). Research suggests sexual harassment is

also common in scientific fieldwork (Clancy, Nelson, Ruthenford, & Hinde, 2014), and women scientists are more likely to quit than women in other professions (Glass, Sassler, Levitte, & Michelmore, 2013). Gender inequality at all levels can thus be deleterious to organizational success.

In this study we used intersectionality theory to explore women conservation leaders' perceptions of how gender identity has affected their careers in interaction with the unique circumstances that different individuals navigate (Healy et al., 2011). Findings suggest that further research could productively apply this framing to disentangle the complexities of doing conservation work globally. For instance, this could include investigation of how perceptions about women's conservation leadership challenges and supports vary across cultures (Straka, Bal, Corrigan, Di Fonzo, & Butt, 2018) or within specific organizations (e.g., Belmaker, 2018), as well as exploration of how women may themselves uphold or dismantle systems of privilege in conservation. More comprehensive investigation is also needed into the perceptions and experiences of women of color in conservation leadership, particularly the differences and similarities amongst their experiences, as well as those of other marginalized groups such as those whose experiences are shaped by social class, sexuality, or gender identity (Bowser et al., 2012; Taylor, 2016). Finally, research is needed to understand how men in conservation perceive and take action about issues of gender, intersectionality, and difference, and to identify actions conservation institutions are undertaking to become more inclusive and just (Bennett, 2018).

Conservation is avowedly a crisis discipline, in which human, technical, and financial capital is widely recognized as insufficient to overcome the environmental challenges we face (Bottrill et al., 2008). It is therefore counterproductive if people working in this field are being subtly and systematically excluded, intentionally or otherwise. More effort is needed to identify effective strategies for making conservation a more inclusive, empowering, and appealing profession in which to work.

ACKNOWLEDGMENTS

This work was supported by the Human Dimensions of Natural Resources Department at Colorado State University and the Colorado State University Libraries Open Access Research and Scholarship fund. The study was conducted under CSU IRB Protocol 16-6599H. We thank our study participants for giving their time and sharing their experiences.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

AUTHOR CONTRIBUTIONS

J.S. conceived the idea. M.S.J. and J.S. designed the study. M.S.J. collected the data. M.S.J. analyzed the data with support from J.S. M.S.J. led the writing of the manuscript with support from J.S. Both authors approved the final manuscript for publication.

DATA ACCESSIBILITY

Due to possible sensitivity of human subjects' data, interview files and transcriptions are only accessible to the authors.

ETHICS STATEMENT

The study was conducted under CSU IRB Protocol 16-6599H. Participants gave verbal informed consent for their interview to be audio-recorded, transcribed, and disseminated with personally identifiable information redacted.

ENDNOTES

¹ Although it was not the focus of this study, it is worth noting that people of all genders can be negatively affected by narratives of masculinity and femininity in the workplace, such as in organizational cultures where men feel they must “prove” their manhood or when men are victims of workplace sexual harassment (e.g., Berdahl, Cooper, Glick, Livingston, & Williams, 2018).

² Seven of the 63 interviews conducted did not meet the inclusion criteria and thus were excluded from analysis for the following reasons: interviewee was based outside the United States at time of interview ($n = 2$), was primarily based at an academic institution ($n = 1$), did not have a science background ($n = 1$) or leadership role ($n = 2$), or interview audio-recording quality was too poor for analysis ($n = 1$).

ORCID

Megan S. Jones  <https://orcid.org/0000-0002-4284-3650>

REFERENCES

- Agarwal, B. (2009). Gender and forest conservation: The impact of women's participation in community forest governance. *Ecological Economics*, 68(11), 2785–2799. <https://doi.org/10.1016/j.ecolecon.2009.04.025>
- Allendorf, T. D., & Allendorf, K. (2012). The role of gender in park-people relationships in Nepal. *Human Ecology*, 40(5), 789–796. <https://doi.org/10.1007/s10745-012-9510-7>
- Alvarez, I., & Lovera, S. (2016). New times for women and gender issues in biodiversity conservation and climate justice. *Development*, 59(3), 263–265. <https://doi.org/10.1057/s41301-017-0111-z>
- Bell, S. E., & Braun, Y. A. (2010). Coal, identity, and the gendering of environmental justice activism in central Appalachia. *Gender & Society*, 24(6), 794–813. <https://doi.org/10.1177/0891243210387277>
- Belmaker, G. (2018, 2 April). Calls for change in handling abuse allegations at top conservation group. *Mongabay*. Retrieved from <https://news.mongabay.com/2018/04/calls-for-change-in-handling-abuse-allegations-at-top-conservation-group/>
- Bennett, N. J. (2018). Navigating a just and inclusive path towards sustainable oceans. *Marine Policy*, 97, 139–146. <https://doi.org/10.1016/j.marpol.2018.06.001>
- Berdahl, J. L., Cooper, M., Glick, P., Livingston, R. W., & Williams, J. C. (2018). Work as a masculinity contest. *Journal of Social Issues*, 74(3), 422–448. <https://doi.org/10.1111/josi.12289>
- Bottrill, M. C., Joseph, L. N., Carwardine, J., Bode, M., Cook, C., Game, E. T., ... Possingham, H. P. (2008). Is conservation triage just smart decision making? *Trends in Ecology & Evolution*, 23(12), 649–654. <https://doi.org/10.1016/j.tree.2008.07.007>
- Bowser, G., Roberts, N., Simmon, D., & Perales, M. (2012). The color of climate: Ecology, environment, climate change, and women of color—Exploring environmental leadership from the perspective of women of color in science. In D. R. Gallagher (Ed.), *Environmental leadership: A reference handbook* (pp. 60–67). Thousand Oaks, CA: SAGE.
- Bruyere, B. L. (2015). Giving direction and clarity to conservation leadership. *Conservation Letters*, 8(5), 378–382. <https://doi.org/10.1111/conl.12174>
- Center for American Woman and Politics. (2018). *Women in elective office 2018*. Retrieved from <http://www.cawp.rutgers.edu/>
- CFI Group. (2017). *Department of the Interior (DOI) Work Environment Survey: January-March 2017*. Department of the Interior. Retrieved from https://www.doi.gov/sites/doi.gov/files/uploads/doi_wes_technical_report.pdf
- Charmaz, K. (2014). *Constructing grounded theory*. Thousand Oaks, CA: SAGE.
- Clancy, K. B. H., Nelson, R. G., Rutherford, J. N., & Hinde, K. (2014). Survey of academic field experiences (SAFE): Trainees report harassment and assault. *PLoS One*, 9(7), 1–9. <https://doi.org/10.1371/journal.pone.0102172>
- Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, 43(6), 1241–1299. <https://doi.org/10.2307/1229039>
- Dezsó, C. L., & Ross, D. G. (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal*, 33(9), 1072–1089. <https://doi.org/10.1002/smj.1955>
- Eagly, A. H. (2007). Female leadership advantage and disadvantage: Resolving the contradictions. *Psychology of Women Quarterly*, 31(1), 1–12. <https://doi.org/10.1111/j.1471-6402.2007.00326.x>
- Eagly, A. H., & Carli, L. L. (2007). *Through the labyrinth: The truth about how women become leaders*. Boston, MA: Harvard Business Press.
- Glass, C., Cook, A., & Ingersoll, A. R. (2015). Do women leaders promote sustainability? Analyzing the effect of corporate governance composition on environmental performance. *Business Strategy and the Environment*, 25, 495–511. <https://doi.org/10.1002/bse.1879>
- Glass, J. L., Sassler, S., Levitte, Y., & Michelmore, K. M. (2013). What's so special about STEM? A comparison of women's retention in STEM and professional occupations. *Social Forces*, 92(2), 723–756. <https://doi.org/10.1093/sf/sot092>

- Healy, G., Bradley, H., & Forson, C. (2011). Intersectional sensibilities in analysing inequality regimes in public sector organizations. *Gender, Work and Organization*, 18(5), 467–487. <https://doi.org/10.1111/j.1468-0432.2011.00557.x>
- Johnson, A. G. (2006). *Privilege, power, and difference* (2nd ed.). New York, NY: McGraw-Hill.
- Kevany, K., & Huisingsh, D. (2013). A review of progress in empowerment of women in rural water management decision-making processes. *Journal of Cleaner Production*, 60, 53–64. <https://doi.org/10.1016/j.jclepro.2013.03.041>
- Larson, A. M., Dokken, T., Duchelle, A. E., Atmadja, S., Resosudarmo, I. A. P., Cronkleton, P., ... Selaya, G. (2015). The role of women in early REDD+ implementation: Lessons for future engagement. *International Forestry Review*, 17(1), 43–65. <https://doi.org/doi:10.1505/146554815814725031>
- Leisher, C., Temsah, G., Booker, F., Day, M., Agarwal, B., Matthews, E., ... Wilkie, D. (2015). Does the gender composition of forest and fishery management groups affect resource governance and conservation outcomes: A systematic map protocol. *Environmental Evidence*, 4(1), 1–7. <https://doi.org/10.1186/s13750-015-0039-2>
- Litz, R. A., & Folker, C. A. (2002). When he and she sell seashells: Exploring the relationship between management team gender-balance and small firm performance. *Journal of Developmental Entrepreneurship*, 7(4), 341.
- Matulis, B. S., & Moyer, J. R. (2016). Beyond inclusive conservation: The value of pluralism, the need for agonism, and the case for social instrumentalism. *Conservation Letters*, 10(3), 279–287. <https://doi.org/10.1111/conl.12281>
- McClellan, E. J., Martin, S. R., Emich, K. J., & Woodruff, C. T. (2017). The social consequences of voice: An examination of voice type and gender on status and subsequent leader emergence. *Academy of Management Journal*, 61(5), 1869–1891. <https://doi.org/10.5465/amj.2016.0148>
- McLaughlin, H., Uggen, C., & Blackstone, A. (2012). Sexual harassment, workplace authority, and the paradox of power. *American Sociological Review*, 77(4), 625–647. <https://doi.org/10.1177/0003122412451728>
- Melero, E. (2011). Are workplaces with many women in management run differently? *Journal of Business Research*, 64(4), 385–393. <https://doi.org/10.1016/j.jbusres.2010.01.009>
- Moss-Racusin, C. A., Dovidio, J. F., Brescoll, V. L., Graham, M. J., & Handelsman, J. (2012). Science faculty's subtle gender biases favor male students. *Proceedings of the National Academy of Sciences of the United States of America*, 109(41), 16474–16479. <https://doi.org/10.1073/pnas.1211286109>
- Newing, H. (2011). *Conducting research in conservation: Social science methods and practice*. New York, NY: Routledge.
- Purcell, D., MacArthur, K. R., & Samblanet, S. (2010). Gender and the glass ceiling at work. *Sociology Compass*, 4(9), 705–717. <https://doi.org/10.1111/j.1751-9020.2010.00304.x>
- Schipani, C. A., Dworkin, T. M., Kwolek-Folland, A., & Maurer, V. G. (2009). Pathways for women to obtain positions of organizational leadership: The significance of mentoring and networking. *Duke Journal of Gender Law & Policy*, 16, 89.
- Shore, L. M., Cleveland, J. N., & Sanchez, D. (2018). Inclusive workplaces: A review and model. *Human Resource Management Review*, 28(2), 176–189. <https://doi.org/10.1016/j.hrmr.2017.07.003>
- Snyder, T. D., de Brey, C., & Dillow, S. A. (2018). *Digest of education statistics 2016 (NCES 2017-094)*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education Retrieved from <https://nces.ed.gov/pubst2017/2017094.pdf>
- Straka, T. M., Bal, P., Corrigan, C., Di Fonzo, M. M. I., & Butt, N. (2018). Conservation leadership must account for cultural differences. *Journal for Nature Conservation*, 43, 111–116. <https://doi.org/10.1016/j.jnc.2018.03.003>
- Sundberg, J. (2004). Identities in the making: Conservation, gender and race in the Maya biosphere reserve, Guatemala. *Gender, Place & Culture*, 11(1), 43–66. <https://doi.org/10.1080/0966369042000188549>
- Tallis, H., & Lubchenco, J. (2014). Working together: A call for inclusive conservation. *Nature News*, 515(7525), 27–28.
- Taylor, D. E. (2014). *The state of diversity in environmental organizations: Mainstream NGOs, foundations, and government agencies*. Ann Arbor, MI: Green 2.0.
- Taylor, D. E. (2015). Gender and racial diversity in environmental organizations: Uneven accomplishments and cause for concern. *Environmental Justice*, 8(5), 165–180. <https://doi.org/10.1089/env.2015.0018>
- Taylor, D. E. (2016). *The rise of the American conservation movement: Power, privilege, and environmental protection*. Durham, NC: Duke University Press.
- Van Oosten, E. B., Buse, K., & Bilimoria, D. (2017). The leadership lab for women: Advancing and retaining women in STEM through professional development. *Frontiers in Psychology*, 8, 2138. <https://doi.org/10.3389/fpsyg.2017.02138>
- Westermann, O., Ashby, J., & Pretty, J. (2005). Gender and social capital: The importance of gender differences for the maturity and effectiveness of natural resource management groups. *World Development*, 33, 1783–1799. <https://doi.org/10.1016/j.worlddev.2005.04.018>
- Zarya, V. (2017, 7 June). The 2017 Fortune 500 includes a record number of women CEOs. *Fortune*. Retrieved from <http://fortune.com/2017/06/07/fortune-women-ceos/>

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

How to cite this article: Jones MS, Solomon J. Challenges and supports for women conservation leaders. *Conservation Science and Practice*. 2019;1:e36. <https://doi.org/10.1111/csp2.36>