

Female Rangers in Latin America: An Assessment of Role, Recruitment, and Work Environment

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Abstract There has been increased research examining conservation rangers. Little is known, however, about female rangers, including their primary roles and workplace environment. Few studies have examined the profession within a Latin American context. This qualitative study explores ranger respondents' perceptions towards the role, recruitment, and working environment of female rangers in Latin American countries. Based on data obtained from interviews with 28 respondents across 11 countries, findings suggest female rangers' roles are largely consistent with that of their male counterparts. However, different strengths were highlighted. Additionally, female involvement in the profession was attributed to national employment-based quotas, increased education and exposure, and the presence of women in leadership. Factors that led to a supportive work environment for female rangers included camaraderie, opportunities for professional development and growth, and attentive supervisors and subordinates. Conversely, the persistence of a machismo culture and discriminatory policies and practices were viewed as obstacles. Findings have several implications regarding gender diversity within the ranger profession. Discussion on academic-practitioner collaborations is also provided.

Introduction

There has been increased effort to better understand the conservation ranger profession. As rangers are the line-level staff in many protected and conserved areas, their attitudes and behaviours are related to the success of management and monitoring conservation efforts. Rangers fulfil a variety of roles including assisting tourists, participating in conservation education programs, and managing and monitoring protected and conserved spaces. In some settings, rangers are tasked with law enforcement responsibilities, while in others, they are not.

Research suggests that women make up 3–11% of the global ranger workforce (Belecky *et al.*, 2019). Recently, there have been calls to better understand gender diversity within the ranger profession. For example, at the 2019 World Ranger Congress, the Chitwan Declaration was established, calling attention to the gender gap within the ranger profession. The declaration set goals for implementing equal opportunities in the hiring and promoting of female rangers, as well as creating measures to ensure that female rangers are appropriately accommodated in the workplace. These calls are founded on the argument that gender diversity improves the effectiveness of conservation organizations and

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their personnel. At an organizational-level, gender equity may lead to more inclusive policies and better decision-making, particularly as it relates to the expansion of alternative strategies to conservation management (see Biermayr-Jenzano, 2003; Aguilar *et al.*, 2004). Despite these potential benefits, there has been little empirical research on female rangers.

Latin America (herein referred to as 'LA') is one global region in which steps have been taken to better understand gender equity within the ranger profession. Gender equity was first recognized as an issue at the 2018 Latin American Ranger Congress held in Ecuador. This conference highlighted that gender issues which affected the work of female rangers were poorly understood, and that there was a need for a future female ranger congress (Carvajal *et al.*, 2018). In 2021, the First Latin American Female Ranger Congress was held in Chile. At the conference, 526 female rangers participated in a survey which found that 46% of female rangers have been exposed to gender-based violence or discrimination in their workplace. Nearly 58% agreed that their institution had barriers that generated inequality between women and men (e.g. sexist biases, culture of impunity, fear of reprisals, and *micromachismos*). Furthermore, just under a quarter of participants reported that their agency had no policies or protocols to address sexual harassment or discrimination (CONAF, 2021).

These results indicate the presence of gender barriers within the ranger profession in LA. However, to effectively address these issues, more knowledge on the perceptions and experiences of female rangers is needed. To address this gap, the current study explicitly focuses on the roles, recruitment, and working environment of female rangers in LA countries. By identifying themes which promote and hinder female involvement in the profession, this study hopes to inform future policies and strategies addressing gender equity in LA. Additionally, this study contributes to knowledge of the broader ranger profession in LA, which remains understudied. Finally, this study highlights the importance of

researcher-practitioner partnerships for data collection, analysis, and dissemination of findings.

Literature review

Rangers: a policing perspective

For the purpose of this study, 'ranger' is defined as, 'persons involved in the practical protection and preservation of all aspects of wild areas, historical, and cultural sites. Rangers provide recreational opportunities and interpretation of sites while providing links between local communities, protected areas, and area administration' (IRF, 2022, 'Who is a ranger?'). Rangers fulfil a variety of roles, including activities that do not involve law enforcement.¹ These roles include community-interactions like raising awareness among citizens, engaging in community problem solving and partnerships, and providing first response services to individuals (e.g. first aid, human-wildlife conflict, fires, etc.) within and outside of protected and conserved areas.

The expansive nature of the ranger role shares many similarities with that of police officers. As in the ranger profession, law enforcement comprises only a small portion of police functions, which also include order-maintenance and the provision of social services (Whitaker, 1982). Notably, given the similarities in terms of geographical responsibility, autonomy and discretion, resource availability, crime problems, and other related organizational and logistical factors, the ranger profession is akin to rural policing. As such, policing research is highly relevant to the ranger profession, and can be used as a foundation for ranger-centred research.

Rangers and gender

Recently, there have been calls to further understand the human dimensions of conservation, particularly from a social science perspective (Bennett *et al.*, 2017). Falling in line with this are studies that have examined conservation rangers. While

¹ In some settings, rangers do not have formal arrest powers.

other research has focused on ranger activities and behaviours (e.g. patrol activities) (Ghoddousi *et al.*, 2022) and related outcomes (e.g. deterrence) (Dancer *et al.*, 2022), ranger-centred studies have focused on understanding the profession and the rangers themselves. Overall, this research has largely focused on job attitudes such as motivation (Moreto *et al.*, 2019; Spira *et al.*, 2019), job stress (Moreto, 2016; Singh *et al.*, 2020), job satisfaction (Eliason, 2006; Spira *et al.*, 2019), and ranger-community engagement (Anagnostou *et al.*, 2020; Moreto *et al.*, 2017). Other scholars have examined game warden perceptions towards discretion (Forsyth, 1993; Eliason, 2003; Carter, 2006; Forsyth and Forsyth, 2009) and conservation officer attitudes towards search authority (Rossler and Suttmoeller, 2022). Additionally, research has begun to examine how rangers interact with their organizational environment, such as relationships with supervisors (Moreto *et al.*, 2021), and the influences of organizational justice on ranger self-legitimacy (Moreto *et al.*, 2021).

Despite this increase in research, there remains little knowledge of the work experiences and attitudes of female rangers. Of the research that exists on female rangers, quantitative studies have yet to find significant differences when examining gender for job outcomes such as job satisfaction and job stress. For example, Dornsife (1989) found that female rangers in the National Park Service in the United States had comparable levels of job satisfaction to that of males. Similarly, gender was not a significant predictor of job stress in Ledford's and colleagues' (2020) study of job stress among 346 conservation officers in the United States. However, qualitative research suggests that females face obstacles when joining the ranger profession. For example, in their study of female foresters in Nepal, Christie and Giri (2011) found that study participants struggled to overcome socio-cultural biases, harassment, and being assigned traditional gender roles (e.g. administrative and secretarial work).

Such factors may also impact female recruitment. For example, Seager (2021) proposed that various issues may influence low level female involvement in the profession, including the physical requirements of the work, the difficulties of maintaining a family as a ranger, and the machismo culture which can perpetuate harassment or discrimination of females

(Seager, 2021). Furthermore, those females who do work as rangers often experience occupational segregation to 'gender appropriate' positions such as administrators, clerks, or secretaries. Despite these barriers, female rangers also have advantages operationally. For instance, Seager (2021) asserts that female rangers may be more likely to use de-escalation tactics during citizen encounters, excel at community-relations, and be better at data collection and record-keeping than male rangers (Seager, 2021).

Gender in policing research

While research on the work experiences and attitudes of female rangers is limited, a considerable amount of research has examined the experiences of female police officers. Prior research has identified various facets of policing that act as barriers, obstacles, or may limit the involvement of female police officers. First, the demands of a job in policing may compete with the demands of female officers' personal lives. Shift work, inflexible schedules, and lack of supportive parental policies serve as a source of stress for female officers, particularly for those acting as mothers and caregivers (Cordner and Cordner, 2011; Kurtz, 2012). Next, women face little opportunity for career advancement in policing. Few female officers hold positions in middle or upper management in policing (Shulz, 2003; Cordner and Cordner, 2011). Research suggests this may be partly due to organizational structure and policies (Kringen, 2016; Shjarback and Todak, 2019), as well as women self-selecting out of the promotion process due to fears of tokenism and criticism (Archbold and Schulz, 2008). Furthermore, female officers feel that they must work harder and be more prepared than males before going up for a promotion (Todak *et al.*, 2021).

Female officers must also adapt to and cope with a police culture known for its masculinity, physicality, and aggressiveness (Westley, 1970; Martin, 1979; Reus-Ianni and Ianni, 1983; Paoline, 2014). Rabe-Hemp (2009) found that female officers negotiate their identities both rebuffing gender stereotypes, while also embracing their advantages at more feminized forms of policing (e.g. working with juveniles and victims). She concludes that while female officers have created new opportunities in the profession, they may also contribute to traditional gender

structures in policing. Notably, studies suggest that female officers are critical of their female co-workers and may avoid or stereotype them to better position themselves with male co-workers (Martin, 1994; Haar, 2006; Archbold and Schulz, 2012).

Considering these barriers, one may expect striking differences in the occupational performance of female officers to that of male officers. Instead, studies suggest that female officers are equally as effective as males (Archbold and Schulz, 2012). Moreover, studies examining work-related outcomes such as decision-making (Lundman, 2009), arrest practices (Novak *et al.*, 2011), and use of force (Paoline and Terrill, 2004), tend to find weak or non-significant effects of gender. Notably, studies have found that female officers tend to use lower levels of force (Schuck and Rabe-Hemp, 2005), avoid aggressive approaches during citizen interactions (Eagly and Steffen, 1986; NCWP, 1999), and have better interpersonal communication skills than their male counterparts.

Current study and methods

The policing literature has highlighted the need for and value of gender-focused studies in the police profession. The purpose of this study is to extend this research into the ranger profession and to qualitatively explore the attitudes and experiences of female rangers in LA. Three research objectives will be addressed in the current study:

- 1) To examine perceptions towards the role that women have within the ranger profession in LA.
- 2) To examine perceptions towards female ranger recruitment in LA.
- 3) To examine perceptions towards the working environment that female rangers encounter in LA.

Data used in this study were collected as part of a larger exploratory study which launched in late 2020.² This larger study consisted of a collaboration between the International Ranger Federation (IRF) and Re:Wild, and the University of Central Florida (UCF). The partnership developed from the third author's work on the ranger profession, as well as their involvement in a practitioner-centred event, namely the World Ranger Congress in Nepal in 2019. Initial discussions related to expanding ranger-centred research to focus on the organizational-level occurred during this event, which then led to the development of a formal partnership.

Sampling

A multi-stage sampling strategy was used to identify and recruit study participants. First, criterion sampling was used to identify potential study participants.³ With the assistance of the IRF and Re:wild, a list of potential candidates were created with the criteria that (1) respondents were a member of a ranger association affiliated with the IRF or (2) were subject matter experts with knowledge or experience related to the study's objectives.⁴ Additionally, the research team used IRF's public membership website to contact ranger associations with a letter of recruitment. Finally, the IRF agreed to post study recruitment materials on their monthly newsletter, which was accessible online.

Once interviews began, a snowball sampling strategy was also implemented.⁵ Notably, after initial review

² The study's purpose was to examine the characteristics, functionality, and effectiveness of ranger associations. Within this broader study, questions related to respondents' attitudes and experiences related to the ranger profession, including job satisfaction, job stress, recruitment, interpersonal relations (e.g. colleagues, supervisors), community-ranger relations, workplace conditions, and familial life were also explored. This aspect of the larger project is the focus of the current study with specific attention placed on the Latin American region. Additionally, the study used a multi-method approach consisting of quantitative and qualitative primary data collection. For the purposes of the present study, the qualitative data will be presented here.

³ Criterion sampling refers to creating a predetermined list of characteristics or requirements, and then studying all cases that meet the set criteria (see Patton, 2015).

⁴ Including staff of NGOs that work directly with rangers.

⁵ Upon completion of an interview, respondents were asked to refer any colleagues who may be appropriate for the objectives of the study and would be interested in participating in the research.

of preliminary interview data and consultation with the IRF's Development Officer Álvarez Malvido, who was also involved in the interviews, it was decided that former and non-ranger association members should also be approached to further expand the breadth and depth of initial study findings. As a result, maximum variation sampling was employed to diversify the sample based on former and non-ranger association membership and to identify any common patterns or differences that may emerge (Patton, 2015).

All individuals approached agreed to participate in the study. This process resulted in a final sample of 28 participants from 11 different LA countries.⁶ Of these, the majority were current rangers (96.4%), completed 4 or more years of college (71.4%), and were members of a ranger association (67.9%). Importantly, gender variation was nearly split with 46.4% of respondents identifying as female. On average, participants were 42 years old, and had worked as a ranger for 14 years.

Data collection

Semi-structured interview guides were used to collect data. The collaboration of key stakeholders from Re:Wild and IRF were crucial to the creation and framing of study materials. While researchers from UCF led the development of study design, creation of the interview guides was an iterative process and involved extensive input from representatives of Re:Wild and the IRF. Their assistance was useful for appropriately contextualizing questions and identifying correct terminology. This assisted with bolstering the credibility and relevance of the questions posed.⁷ Interviews began

in April 2021 and continued until March 2022. All interviews were conducted using Zoom, a video conferencing software.⁸ Scheduling took place via email and WhatsApp, a messaging service which is the primary mode of communication among rangers in the region.⁹

Prior to each interview, participants were briefed on the objectives of the study, their participation, and other study protocols (e.g. confidentiality, data storage). Verbal consent was provided by all study participants, and most consented to having the interview digitally recorded.¹⁰ A translator assisted with all interviews. In total, 26 interviews were conducted in Spanish, and two interviews were conducted in Portuguese. Interviews were approximately one hour. The recordings were transcribed and subsequently verified by the research team. Additionally, the researchers took field notes for all interviews. All data were de-identified and securely stored.¹¹

Credibility, access, recruitment, and rapport: academic and practitioner perspectives

To increase the adoption of evidence-based practices in criminal justice, there have been increased calls for translational research. A key element in translational research is researcher-practitioner partnerships (RPP's), in which practitioners play a direct role in research. Such partnerships have been noted to build trust, credibility, and cooperation between academics and practitioners, as well as increasing the likelihood that practitioner organizations adopt evidence-based practices (Pesta

⁶ Study respondents were from the following countries: Argentina, Brazil, Chile, Columbia, Costa Rica, Ecuador, Guatemala, Mexico, Paraguay, Peru, Uruguay.

⁷ Two semi-structured interview guides were created by the research team. The first guide was developed for line-level rangers, and the second was a managerial guide for rangers in supervisory or executive positions. Both interview guides consisted of two main sections. The first section focused on respondent experiences with ranger associations, while the next focused on attitudes, perceptions, and challenges of rangers' work.

⁸ This was largely due to logistical challenges (e.g. travel restrictions) and other public health concerns related to the COVID-19 pandemic.

⁹ Flexibility in scheduling was important, as several of the participants needed to adjust their interview time due to extended stays in the field, gaining access to the internet, work issues (i.e. emergencies), or unforeseen complications such as power outages.

¹⁰ Two participants did not consent to audio recording due to security and confidentiality concerns.

¹¹ All study procedures were approved by UCF's institutional review board (ID: STUDY00002714).

et al., 2019). Despite the attention that RPP's have received, there has been little discussion of how practitioners improve aspects of research design, such as measurement, data collection, and analysis. Instead, discussion of translational research appears to be unidirectional, extending from research to policy and practice. Uncommon are firsthand accounts from practitioners about their experiences working with researchers. We now turn to presenting insight on the data collection process from the distinct perspectives of the research team.

An academic vantage point: establishing credibility for access and recruitment Gaining access to and building rapport with study participants is of key importance when conducting qualitative research. The way researchers enter the field and build relationships with participants can significantly influence the quantity, quality, and credibility of collected data (Lincoln and Guba, 1985; Patton, 2015). Establishing access without the assistance of practitioners would have proven exceptionally difficult for the current study, especially given the multi-country and virtual nature of the data collection. Additionally, many rangers work in isolated areas, which can result in issues with accessibility. Without a proper introduction to the study, there is a possibility that rangers may feel the study does not apply to them,¹² or is illegitimate, opting to not participate. Collaborating with IRF and Re:Wild proved vital in three primary ways: providing legitimacy and credibility to the study, providing access to formal and informal networks, and establishing rapport with participants.

Acting as organizational gatekeepers, the IRF and Re:Wild granted legitimacy and credibility to the study. The organizations allowed their logo to be placed on all recruitment and study material. This branding likely helped to reduce distrust or

suspicion among participants about the intent of the study.

These organizations also provided access to both formal and informal networks of communication which assisted with recruitment, including with all its member associations, and monthly newsletter. Additionally, IRF worked with Force for Nature¹³ to post a recruitment letter on their mobile app. Informally, IRF and Re:Wild contacted executives and administrators of ranger associations, requesting them to distribute the study's recruitment materials to members.

Finally, establishing rapport with study participants was facilitated by the work of federation officer Álvarez Malvido, the second author of this study. She served as coordinator, translator, and most importantly as a liaison for rangers in LA. She was key to accessing this global region and played a crucial role in assisting with study recruitment. Moreover, Álvarez Malvido is originally from LA. Therefore, while acting as a translator, she was able to facilitate and overcome those language and cultural barriers faced by the other researchers. This positionality and ability to establish rapport assisted immensely with data collection, particularly with female respondents¹⁴ (see Ortiz, 2005; Broom et al., 2009). Finally, thanks to her knowledge in the field, Álvarez Malvido assisted interviews by asking nuanced follow-up questions, making distinctions, and clarifying terminology that may have otherwise gone unnoticed.

A practitioner vantage point: building rapport and ethical research practices As part of the IRF's staff, it was critical to be involved in this study to fully understand the working environment of rangers, especially considering LA has received little ranger-centred research in comparison to other regions. While conducting the

¹² Authors' note: Within the region, and like other places around the world, there are many names for a 'ranger'. For example, in Latin American countries, a ranger may be referred to as: *guardarecursos*, *guardaparques*, *vigilantes*, *guardaparamos*, and *guardabosques*, to name a few. However, for the broader study, the IRF definition of 'ranger' was used given the global nature of the study. Clarification on *who* constitutes as a ranger in Latin America was important to avoid confusion.

¹³ Force for Nature is a registered charity organization which seeks to support and facilitate rangers. The mobile Force for Nature app is designed to be a networking forum for rangers, as well to provide them training and knowledge.

¹⁴ Positionality is an awareness of how a researcher's position (e.g. demographic characteristics) and presentation (e.g. student, expert, insider, outsider) interacts with the context of a study. A researcher's positionality may influence all stages of data collection and analysis.

interviews, active listening to the participants was essential. My full attention was needed to observe and acknowledge the responses and emotional cues of participants, while also writing down everything exactly as said to enhance the credibility of the data. Additionally, I had to translate in real-time from Spanish to English to ensure that non-Spanish speaking research team members could effectively interact with study participants.

As a woman and conservation professional myself, who lives in the same geographical region, speaks the same language, and shares a similar socio-cultural context, I felt an immediate connection with participants. Recognizing that virtual interviews are limited compared to face-to-face interactions, it was important to create an appropriate setting that assisted with obtaining detailed responses. I believe that leaving my camera on in my living room, and sharing my personal background helped elicit responses, especially as many of the respondents participated in their personal homes. Also, my personal experience in the field allowed me to ask informed and contextualized follow-up questions that prompted more open discussion with respondents, which may have been overlooked by my academic partners.

Strong ethical considerations were essential for the study. Thus, being led by an experienced professional academic team was necessary to follow ethical and data quality procedures. Another critical issue was prioritizing the emotional safety and wellbeing of the interviewed, which meant being respectful of the emotional boundaries set by the participant. As a woman in this professional field, it was easy for me to connect to their stories and testimonies. Also, I was able to ask questions that might turn out uncomfortable for some of the interviewees, such as those related to their personal views. However, I had to be careful to not cross the line. For example, some female rangers felt more comfortable than others sharing their experiences or perceptions related to gender issues. Others avoided the topic, and it was important to respect their decision to do so. This was managed very professionally by the academics in identifying that fine line in where to stop replace with: as well as being cautious in not overselling the potential impacts of the study results.

Another impression I had was that since rangers are often living in isolated places, and poorly recognized, they were not used to people asking them to be interviewed. Despite the challenges, most rangers are very proud of their profession. This pride enabled the conditions for sharing more openly. In many cases, we needed to wrap up the conversation due to timing constraints since they were enjoying, and even thankful, for being considered for the study and for being listened to. Some even expressed satisfaction that their voice was going to be read by a wider audience, hoping it would allow for a better understanding of the profession and its challenges.

Analytical strategy

The analytical approach used for the present study was iterative and grounded in nature. After completing the initial set of interviews, the research team discussed the emergence of preliminary codes, which influenced the approach and direction of subsequent interviews. Interview transcripts and fieldnotes were coded using MAXQDA, a computer assisted qualitative data analysis program. First-level initial coding was completed to separate data based on commonalities and differences (Saldaña, 2015). Next, the identification of overarching thematic constructs was completed through pattern coding (Miles and Huberman, 1994). Throughout the analytical process, the research team actively discussed the framing of codes and themes, which was bolstered due to their familiarity with the interview process. The involvement of Álvarez Malvido was especially helpful in contextualizing codes and themes that were mindful of intra-regional social and cultural variation.

The next section presents the findings of the study and quotations provided were identified to best reflect the relevant description or theme. As the second author was involved in translating for most of the interviews, many statements are based on their interpretation and summary in real-time. Each statement that is not a direct quote will be indicated by the initials of the second author Álvarez Malvido. To facilitate confidentiality, pseudonyms are provided for each study participant. When

necessary, minor edits were made to quotations for clarity.

Findings

Role of women within the ranger profession in LA

The first research objective centred on exploring study participants' perceptions towards the role that women have within the ranger profession in LA. In general, respondents believed that women had an important place within the ranger profession and that their roles and duties did not significantly differ from their male counterparts.¹⁵ Notably, most roles overlapped suggesting a level of consistency in the ranger profession in the different countries included in the current study. Opinions, however, did differ in terms of the perceived strengths or suitability of men and women when it came to accomplishing specific tasks. This was particularly noticeable when discussing community-centred activities and activities that required physical activity. Respondents believed that female rangers were especially suitable for communicating with and educating communities on local conservation efforts, including other women. Victoria, for example, described that an important role female rangers had in Paraguay was the 'connection they make or this interrelationship they facilitate with other women that are not rangers, with other local women or groups of women'. When reflecting on the role of women, some participants spoke on the physically demanding nature of the job to justify the belief that women were more suited for less physically taxing responsibilities.

Respondents also acknowledged that one's capability was not only tied to their gender or sex given that individual variation existed among individuals of the same gender and sex. Indeed, study participants perceived the varied strengths of individuals to not only be useful but were needed given the various responsibilities rangers

were tasked with. Moreover, by having a more diverse work group with various skill sets, alternative approaches may be available that otherwise would not be:

Not everyone has the same ability to fulfill certain tasks [...] So, she emphasizes on not looking at it as a male versus female [...] The important thing is to create teams and identify the capabilities and abilities of each ranger. It doesn't matter what gender they have. Just create a good team that is diverse because of all the diverse roles that they fulfill. (Adrianna)

He definitely thinks that it would be very important to have female workers [...] He's emphasizing that it's clear the value of the female figure in the communities. That's why he thinks that it is important to have female rangers as well. He thinks it would not only strengthen the team, not just doing the typical patrolling or monitoring, but constructing that sense of relationship with the communities (Joaquín)

Recruitment of female rangers in LA

We now turn to discussing recruitment efforts and general employment trends related to women within the ranger profession in LA. In general, it appears that female involvement in the ranger profession has increased in recent years in LA, with some respondents suspecting that there was 'between 25 and 30%' (Pedro) female rangers, while some believed that the ratio was likely '50% to 50%, female and male' (Valentina). This considerable change was not reflected in all countries, however, with some respondents describing more modest changes:

In Galapagos, the majority of rangers in the field are male. And she said there

¹⁵ The regional nature of the current study led to the identification of various responsibilities ranging from community engagement, education, and development, data collection, wildlife monitoring, fire management, tourism-related tasks, and enforcement and security-related activities. This is like prior research that has found that the ranger profession is multi-faceted and involves a variety of responsibilities (see [Moreto and Matusiak, 2017](#)).

are only two female rangers out of about 300 in the field, like field rangers. And she says that in the administrative positions, there are a lot more women, and as managers of protected areas, there are few more, but still very reduced [...] [She said], ‘We are definitely a male dominated field work. And it’s sort of moving forward, but slowly. (Catalina)

Another respondent from Chile described that while there was improvement in female involvement within the ranger profession, regional variation was present with some areas more hesitant than others. She noted how there were female rangers ‘but not in all regions.’ Furthermore, ‘there is still resistance to change in’ some regions (Sofía).

Three key factors were identified that study participants believed directly impacted female recruitment and bolstered the number of women working as rangers: employment-based quotas, education and exposure, and women in leadership positions. *Employment-based quotas* were believed to have a direct impact on the increased involvement of women in the ranger profession in some of the countries included in the study. Specifically, respondents commented on how established requirements for female employees in various sectors enabled growth within the ranger profession. Quotas, however, are largely only applicable when there are individuals informed about and interested in the position. Indeed, some respondents believed that gender inequity is partly due to the lack of interested women in the ranger profession, with one respondent admitting how they did ‘not recall any application of a female ranger’ (Joaquín).

Addressing this potential lack of information was another factor that respondents believed contributed to increased female participation. Specifically, 28% of study participants described how *education and exposure* led to an increased interest from women to join the ranger profession. One respondent believed that such educational awareness and exposure highlighted how the ranger profession itself was ‘progressing’ and going through ‘its own progression’ when it came to gender equity (Pedro). Respondents explained how the growth in educational opportunities for women, particularly ones

tailored to the ranger profession or conservation more broadly, led to a greater understanding of the work. For example, Adriana offered:

She also says that something that helped this change was that they opened this technical career [...] so she thinks that that has to do with more female rangers now [...] The possibility to study for ranger. And a lot of girls started studying that. So, she really thinks that it has to do with opening this opportunity. I mean, the technical career for everyone.

Increased exposure to women about the ranger profession was also identified to be an important factor. In addition to establishing tailored advertising campaigns about the ranger profession to women, respondents described how efforts were made to ensure that the public was able to interact more frequently with female rangers. It was believed that by interacting with female rangers, public perception about the stereotype of rangers being masculine would change. Such interaction was perceived to be important in altering assumptions of *who* can become a ranger. Indeed, Miguel surmised that the reason why ‘the number of females that want to become a ranger is small’ was because they ‘think it’s not work for a female.’ They added, ‘Maybe they don’t know a lot of examples of female rangers, so they don’t think of becoming a ranger.’ Notably, several study participants were some of the first female rangers in their respective countries, or held more senior positions felt it was their responsibility to be an example and demonstrate that women have a place within the ranger profession:

She likes to show the female rangers that they can do the same thing as men. To show that they are capable, and it’s a matter of attitude. It’s been an effort to recruit more women in the last few years. (Rosa)

This sense of leadership represents the third factor that 29% of respondents believed has led to the growth in numbers of female rangers in LA: *women in leadership positions*. Several respondents commented on how more women were increasingly

becoming involved in positions of authority, including as directors and sub-directors. This was vital in not only facilitating a workplace environment that recognized the needs of women but provided a pathway for professional success. Moreover, female leaders were viewed to be trailblazers that helped form the foundation for the future success of women in the profession. Respondents also commented on the more personalized nature that female leaders embodied:

Everything at the moment is [led by] women, and I really love it [...] In this conservation area, we have two male directors and two female directors [...] And one of them, she was one of the best directors that we ever had. She always used to say about our labour rights and always fight [for them]. She was so concerned with every little single thing, like you have to drink water every day [...] Or visit your office, "Hello, and how are you doing? How are you feeling? What are you up to?" [...] I prefer women as a leader. (Juan)

Notably, with reference to employment quotas mentioned previously, respondents described how women in positions of power were not necessarily attributable to such quotas. One respondent explained that the increase of female rangers in positions of power was 'more sort of a natural flow.' He added, 'It's been women taking the lead in many aspects' when it came to their promotion within the organization (José).

Work environment for female rangers in LA

Factors that led to a supportive workplace environment The third research objective focused on examining study participants' perceptions towards the work environment for female rangers. First, we examine factors that were identified to help create a positive workplace environment. Three primary themes emerged from respondents: camaraderie, opportunities for professional development and growth, and attentive supervisors and subordinates. Mutual respect,

willingness to adapt, and teamwork formed the bedrock that facilitated *camaraderie* amongst rangers, both male and female. Respect was viewed to be central in developing a sense of community. Part of this mutual respect hinged on the recognition that both men and women could perform the job, regardless of perceptions related to specific tasks. In other words, it was believed that anyone could be a ranger. This led to a workplace environment where despite being one of few women, or perhaps even being the only woman in the area, female rangers felt respected and comfortable:

So, she's saying that it's not really about men and women. She doesn't feel there's discrimination on that regarding rangers in general. The relationship between colleagues, it's pretty good. It doesn't matter if it's a female or male ranger. It's very good. There's no discrimination. She says that in her case, there have been times that she was the only female ranger with six or seven male rangers in the field. And she wasn't uncomfortable. She felt respected. (Adriana)

Notably, this belief required male colleagues to adapt and alter their assumptions regarding female rangers in some settings. Additionally, one respondent, who was one of the first female rangers in Uruguay, described how her male counterparts 'had to adapt to a new reality' and how 'they needed to change the way they communicated, the way they dress, the way they perform themselves on a daily basis' (Carmen). Respondents also highlighted the importance of teamwork and how relationships with colleagues were analogous to that of being in a family. Indeed, some respondents described female rangers were at times viewed as maternal figures:

She said that in her case, in her story, in her particular area, she's never felt different. She's never felt frustrated. She's always received a well treat by her fellow colleagues, male colleagues and female rangers. They see her as a mother sometimes or as a sister. So, that sort of environment, a very comfortable one on there, a lot of teamwork and a

lot of mutual respect. So, she says that she never felt that something different in her case. (Verónica)

The second theme that arose from the data that led to a more positive workplace environment were *opportunities for professional development and growth*. In addition to the presence of women in positions of authority and leadership mentioned earlier, study participants also commented on how training opportunities created a positive work environment for women, particularly when they can act as facilitators. This combination of professional development and growth potential was viewed not only as a personal benefit, but respondents also suggested how such opportunities created an environment where more senior female rangers can further establish an environment that was supportive for newer female rangers:

She says that she's not sure if the word is right, but she definitely feels calm and with a calm feeling of tranquillity as well. Maybe the new female rangers don't have to do, you know, all the little baby steps that took the first generation. All the very small steps, small steps to be where they are now. So, that gives her a lot of satisfaction. (Rocío)

In another situation, there was a female ranger that looked like she needed help, so she tried to help her, and the trainer stopped her. [They said], "Hey, you're a woman if you can do it, she can do it as well." In the end she helped her anyway, and now she is one of her best friends in the fire training. She is now included in a big family. It's always important to support teamwork and support each other. (Rosa)

Attentive supervisors and subordinates were identified as the third key factor mentioned by respondents. Respondents described that being able to communicate and work with supervisors and subordinates was key in being able to effectively voice needs and concerns, while also being able to manage and lead. The centrality of respect was also

paramount when it came to managerial interpersonal relations.

Factors that hindered a supportive workplace environment Finally, we discuss themes associated with hindering a supportive workplace environment for female rangers in LA. While most female respondents did not feel that they experienced discrimination from colleagues due to their gender, some study participants shared their experiences and provided insight as to why they believed such situations occurred. Two primary themes emerged from the interviews: *persistence of a machismo culture and status quo* and *discriminatory policies and practices*.

Approximately 54% of study participants referred to situations where they experienced harassment, lack of respect and support, and increased scrutiny compared to their male counterparts. Most respondents (64%) attributed this to the *persistence of a machismo culture and status quo* within and outside the organization they worked for. This machismo culture was not necessarily unique to specific organizations, but rather stemmed from broader social and cultural expectations of men and women that persisted within the workplace. Respondents articulated how such a machismo culture and status quo led to differences in how men and women rangers were perceived within and outside of the profession, and expectations of what they can and should do. Victoria reflected on how 'many times, just being a female, she was pointed at or not taken seriously, just because she is a female ranger'. Other study participants echoed this sentiment:

But she also says that at the beginning she felt difficult in the way that people see her or used to see her going out to the field, for example, four or five days with only men, because there's a machismo culture [...] And she referred to this feeling of being pointed out or looking where to live and stay for five days in the field was more from the family and the society, like from the outside than from fellow rangers. (Elena)

She says that she felt there was more discrimination for being a woman.

Because she says it's still a very macho country, Colombia, and the culture is like that. So, she gave an example that you can have a male ranger with two homes and that's fine. Like it's not going to be judged. But a female ranger that has a home and is working, they get pointed at, they have this discrimination. (Valentina)

Indeed, this assumption may also impact whether women pursued the ranger profession. As suggested by Javier:

It doesn't mean that it's because they (women) don't want to be rangers, but it's more related to how badly it is seen for women to be in the field with men [...] It's seen pretty bad, like it's not socially accepted. Like people, they get pointed at, you know. So, they're very, very few female rangers. They do not like this sort of attention.

Respondents further surmised how the machismo culture and status quo led to female rangers working harder than their male counterparts to earn respect and 'demonstrate that women are as capable as men' (Ana). Nonetheless, it was believed that women's activities and decision-making were more heavily scrutinized than male colleagues. This also helped sustain the existing status quo as 'with men, they [management] don't have to question so many things, you know, that's just the way it has been done in the past' (Sofía).

Furthermore, study participants commented on how such a culture impacted male and female interpersonal relations. For instance, one male respondent explained how the growth of women in the ranger profession is a 'big cultural change' because some male rangers may still think that women 'cannot climb the mountain or whatever' (Andrés). Relatedly, participants commented on how male colleagues would not support their female colleagues because they 'don't want to interfere, so they just move aside from the problem instead of, you know, being part of the solution' (Valentina).

In line with the machismo culture, 25% of respondents described how *discriminatory policies and practices* created a challenging work environment. Study participants explained how organizational policies that neglected or overlooked personal and professional considerations of female rangers led to diminished opportunities for professional advancement and stability. For example, while discussing female applicants for job positions, Marcos stated, 'Sometimes a few [females] do apply to the positions, but they are not chosen. There is the prejudice of "she is a woman, she is getting married, she is going to leave"'. Other respondents commented on the challenges of having a family given job requirements, including required days in the field. In their response, Valentina described how they felt their status as a mother led to workplace discrimination and being 'disqualified' from the profession:

She also, it started to get worse and she felt that she was also discriminated against, because she was a mom, a working ranger mom. So, in her free time, she would dedicate time for herself and her family. And that was seen as something that was not correct. However, she clarifies that she used to think she did this in her free time, you know, in her personal time. But that was not perceived well by her boss. So, they told her that she was in the wrong institution, that it was not for mommies and things like that [...] There's this sense of not only harassment, but disqualification based on gender.

Moreover, discriminatory assumptions of what female rangers are capable of also led to being overlooked or being relegated to specific tasks. Study participants also described how the pay inequity between female and male rangers, and how supervisors would also undermine their efforts, including interacting with communities for information gathering. For instance, one respondent described how their immediate supervisor would tell 'the people in the community not to trust any female ranger' (Victoria).

Discussion and future research

The objective of this study was to examine perceptions of female rangers in LA as it pertains to their role, recruitment, and work environment. Overall, respondents identified no major differences between males and females as it relates to their work role. Furthermore, both genders noted the need for and benefits of diverse work teams as it relates to community engagement and operational effectiveness.

Regarding recruitment, respondents noted that gender-based employment quotas and educational opportunities facilitated the involvement of females in the field. However, respondents noted that more exposure to the profession was needed for female applicants to take advantage of these opportunities. Specifically, respondents noted that exposure to other females working as a ranger may encourage other applicants. Similar findings have been found within the policing context. For example, [Todak et al. \(2017\)](#) found that female university students who wished to be a police officer reported exposure to other females in policing as a source of motivation. One implication of this finding may relate to the marketing and advertising of ranger positions. If female applicants believe that being a ranger is not suitable for females, they may be less likely to apply despite an interest. In the future, a content analysis of job postings and recruitment material by conservation agencies may prove insightful for determining both the exposure of female rangers, as well as identifying themes that might dissuade female applicants. Such a study would be particularly relevant considering that the ranger profession is often stereotyped as militaristic, like policing (see [Duffy et al., 2019](#)).

Last, respondents identified various factors that promoted a supportive work environment for female rangers, including camaraderie, opportunities for progression and growth, and attentive supervisors and subordinates. Conversely, a machismo culture, as well as discrimination and or disqualification based on gender, were sources of a negative work environment. Importantly, the sources of these negative factors were both internal and external to the profession. One key negative impact of these factors for female rangers may be feelings of

disconnectedness from the workgroup and or the organization. For example, respondents remarked on how they felt a need to prove their worth to male colleagues, or that male colleagues were apathetic to challenges which female rangers face. While changing broader cultural norms may be infeasible, there are some implications for how conservation agencies may be able to buffer the strains that female rangers experience.

Organizational justice refers to employee perceptions of fair treatment by their organization. Elements of organizational justice include the fairness of organizational outcomes, procedures, interpersonal treatment, and provision of information ([Colquitt, 2001](#)). Previous research in policing finds that organizational justice can contribute to organizational identification and commitment, as well as act as a buffer against external strains. For example, [Nix and Wolfe \(2017\)](#), found that organizational justice helped buffer police officers from negative publicity and improved their motivation. In the context of the current study, while organizational justice may not be able to directly address broader cultural sentiments, it might help buffer those strains felt by female rangers by promoting identification, commitment, and work motivation within the organization. This implication is key, as many respondents stated that sources of discrimination often came from outside of the organization. Finally, organizational justice promotes positive supervisor-subordinate relationships, which was identified as a key factor leading to a supportive work environment for female rangers.

Next, it remains unclear how factors that promote and hinder a supportive work environment for female rangers may relate to one another or coexist. For example, our study found instances in which females perceived no stigma until becoming pregnant or fulfilling a caretaker position. In these instances, female rangers may be transferred to administrative or secretarial positions and removed from the field. For some, this resulted in feelings of discrimination and disqualification. In other cases, female rangers who were supervisors appeared to be well accepted by male subordinates. This finding was unexpected and unique, particularly as rangers felt that female supervisors helped to fracture a

machismo culture, which at times could be just as tough for male rangers.

Future research could provide insight to these issues in several ways. First, studies could examine how perceptions of female rangers are influenced by familial characteristics (i.e. marital status and number of children) and or job position (i.e. field ranger, administrative, supervisor). Experimental vignettes may be a particularly effective way to explore these relationships. Second, studies could examine if variation in organizational structure or policies is related to the number of female rangers employed, as well as their perceptions of the work environment. Finally, future research should investigate how female leadership may influence occupational norms. Both rangers and police officers work in organizations that encourage masculine cultural norms (Reus-Ianni and Ianni, 1983; Seager, 2021). Female leadership may aid in changing occupational norms related to masculinity. Alternatively, female leadership may serve to perpetuate these norms as a means of gaining acceptance and preventing stigma (Archbold and Schulz, 2012).

Questions related to the credibility and transferability of findings warrant consideration (see Lincoln and Guba, 1985). As alluded to earlier, the involvement of a practitioner during data collection was valuable in assisting in real-time ‘member checks’ with study participants, which helped bolster the documentation and conceptualization of initial codes and minimize initial misinterpretation (Lincoln and Guba, 1985). The practitioner also represented a trusted gatekeeper and sponsor for the study (see Moreto, 2017), which assisted in creating a credible and comfortable setting for the study participants. Importantly, while the study’s findings are not appropriate within the scope of statistical generalizability, the findings provide the foundation for ‘theoretical propositions’ that may be ‘generalizable’ (Yin, 2009, p. 15).

Finally, this study highlights the importance of researcher–practitioner partnerships as it relates to female rangers in LA, as well as the broader ranger profession. By working with well-known organizations in the ranger field, such as the IRF and Re:wild, study results can be readily disseminated to conservation stakeholders, avoiding barriers such as language, academic jargon and journal

paywalls. Furthermore, these organizations are better positioned to facilitate the translation of study results into policy due to their nuanced understanding of the field context, as well as legal and cultural variation across countries. In turn, administrators and managers of protected and conserved areas can have confidence that new policies and strategies are grounded in scientific evidence provided by stakeholders within their field. Finally, we hope that this partnership has not only identified opportunities for continued research on female rangers, but will also be ready to evaluate new efforts to improve gender equity among rangers in LA.

Conclusion

While under-represented, female rangers play a key role in the ranger workforce and should not be ignored. This study is one of the first to examine the attitudes and experiences of female rangers in LA. The results presented here highlight the strengths of gender equity within conservation, as well as the barriers that female rangers face regarding roles, recruitment, and the work environment. Additionally, this study demonstrates the advantages of researcher-practitioner partnerships, particularly as it relates to credibility, access, and quality of data collection. We hope this study encourages other researchers to engage in such partnerships, as well as to continue examining the experiences and attitudes of females within the ranger and policing professions alike.

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