

# **An Ecofeminist Approach to Climate Change at a Conservation NGO in Ecuador**

Treasure Joiner, BSPH 2025

SPHU 4550 Capstone Independent Study, Spring 2025

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## **Introduction**

Climate change describes the process in which long-term consequences and changes in temperatures and weather patterns occur (United Nations, n.d.). Although changes in the Earth's weather patterns are a natural process, evidence suggests that since the Industrial Revolution, climate change has been driven by human activities including deforestation, industrialized agriculture, the burning of fossil fuels for transportation and electricity, and the overall overconsumption of materials and resources (US EPA, 2025). Scientists have even coined an informal geologic to describe our current era, the *Anthropocene*, meaning human activity has dramatically altered our climate and ecosystem (NRDC, 2022). These activities have led to an increase in greenhouse gas emissions such as carbon dioxide and methane which results in global warming (European Commission, n.d.). This shift in temperature influences earth's natural cycles and weather trends which pose long-term consequences such as rising sea levels and severe and frequent wildfires, heat waves, hurricanes, and drought. The impacts of climate change also pose loss and decline of ecosystems and the natural environment, including threats to human civilization (United Nations, n.d.).

The effects of climate change continue to worsen, negatively impacting the health and safety of communities around the globe (WHO, 2023). Climate change related events such as extreme droughts, fires, and floods have resulted in devastating impacts such as injury, exposure to illness or disease, displacement, and even death. Climate change-related events also have the potential to exacerbate the existing inequities that communities experience such as access to

resources which could be utilized to mitigate and adapt to the devastating impacts of climate change.

One of the understudied consequences of climate change-related events is the effect that they have on psychological health. Coined by Glenn Albrecht, *eco-anxiety* refers to feelings of fear, uncertainty, worry, and distress due to the climate change crisis and degradation of the environment (Turğut, et al., 2025; Coffey, et al., 2021). Exposure to such life-altering events can also increase the risk of developing post-traumatic stress disorder (PTSD), anxiety, depression, and other mental health disorders (Padhy, et al., 2015). Overall, there is a rising concern about the ways that climate change will influence our lives and future generations to come.

Understanding the ways that climate change impacts psychological health matters because it allows us to increase our awareness of how communities cope with exposures to climate-related disasters. It also provides insight into our own understanding of climate change and our ability to cope, adapt, and mitigate the impacts of climate change in our communities.

Communities, and women in particular, have a growing awareness of the impact climate change is having on the world, yet structural barriers prevent many women from amplifying their voices and engaging the self-efficacy to drive necessary change (Shiva, 2016). Women are disproportionately impacted by climate change due to existing gender inequalities influenced by socioeconomic, cultural, and environmental factors in their communities. This influences the capacity at which women are able to adapt, mitigate, and participate in decision-making in their communities (Anjum et al., 2025).

This research explores the intersections between stress, climate change, and positionality of women connected to FCAT (Foundation for the Conservation of the Tropical Andes), a grassroots conservation NGO in Ecuador. The overarching goals of this study are to 1) explore

the impact that climate change has on the psychological health (stress) of women, 2) and to identify the types of climate change stressors women experience. Specifically, this study aims to address whether women at FCAT are concerned or stressed about climate change and their ability to identify strategies in coping with the consequences of climate change and/or climate related events. FCAT is an avenue to understand the relationship between gender and conservation efforts. The intention of centering the perspectives and experiences of women in this research is to recognize the ways that women are affected by the consequences of climate change and to emphasize the importance of amplifying women's voices and to create representation of women in conservation work at FCAT and their overall contribution to conservation initiatives. Understanding the ways that women experience and perceive the relevance of climate change in their lives will generate new knowledge while highlighting innovative and equitable solutions to climate change.

For this research, I combined ecofeminism and intersectionality theories to identify connections among climate, gender, and psychological stressors. This framework was used as a lens from which to view the unique experiences of the women in FCAT to prevent the generalizing women and their relationships to climate change and the environment. Ecofeminism and intersectionality also were used to focus on the roles that women play in their communities as they relate to climate change adaptation and mitigation. Coined by French writer and activist Françoise d'Eaubonne in the 1974, ecofeminism describes the patriarchal and capitalist systems in which women live are subjugated by and the ways that their oppression is tied to the oppression of nature and the destruction of the environment. Ecofeminism draws from feminist and ecologist theories, emphasizing that as long as nature continues to be dominated and exploited, the liberation of women also cannot be achieved (Puleo, 2017). Since ecofeminism

was coined, its interpretation has evolved over the years and formed social justice movements across the globe. It has even developed into subcategories such as womanist ecofeminism, spiritual ecofeminism, and activist ecofeminism (Sharma & Singh, 2025). However, ecofeminism has been criticized for its essentialist values by situating women's inherent connection with nature. Characterizing women's relationship to nature and intertwining the oppression of the nature and women can place the burden of care and responsibility of caring for the earth, rather than addressing the oppressive systems which exploit and control both women and nature (Bertana & Blaton, 2025; Sharma & Singh, 2025). Although ecofeminism has received criticism, in the context of this research, it is used as a form of activism for gender equity and environmental and climate justice. In the context of this research, ecofeminism recognizes the need for women to have free decision-making power in order to become liberated from oppressive systems (Puleo, 2017). This includes the power to create social change in their communities impacted by climate change and environmental degradation.

Intersectionality further frames women's experiences through their identities and the social structures of their communities. Therefore, in this research, using an intersectional lens within the ecofeminism approach was also used to understand the impact of climate change in their lives. Coined by Kimberlé Crenshaw in 1989, intersectionality was used to describe the oppression that Black women in the United States experience. Intersectionality emphasizes that we cannot understand the experiences of people without accounting for power imbalances within gender, race, ethnicity, class, age, culture, history and along with other identities, backgrounds, and existing socio-political systems that shape the experiences of individuals and communities (Kings, 2017) as they relate to the intersection of power, discrimination, and inequity. Specific social contexts determine a person's relationship and vulnerability to the consequences of

climate change and the ability to adapt and respond to such events. They also determine a community's access to economic, informational, and material resources and even the availability of options and choices (Djouidi, et al., 2016). Using an intersectional approach to ecofeminism is necessary in understanding women's perceptions and knowledge of climate change and how this affects their stress and coping strategies. Combined, the ecofeminism-intersectionality framework applied in this research, seeks to understand climate change and its impact on communities by incorporating aspects of the FCAT women's experiences that would otherwise be overlooked, therefore expanding our capacities to fully understand the impacts of climate change on the women of this community.

## **Methods**

To understand the relationship between gender, climate, and psychological stress, this study was conducted via a mixed-method approach. Fieldwork consisted of participant observation in tandem with the Perceived Stress Scale (Cohen, S., Kamarck, T., & Mermelstein, R., 1983.) and the Climate Focused Stress Scale (Joiner, 2025). All data collection occurred at the FCAT field station over the course of a two-week period in June 2024. Responses to survey questions were analyzed quantitatively and observations were analyzed through a qualitative, ethnographic lens. The mixed-method research study is anticipated to fulfill the research purpose and contribute to the burgeoning field of scholarly research oriented around women's stress in relation to climate change. All data collection was conducted in Spanish. A member of the study team conducted the semi-structured interviews with the participants in Spanish. The participants of this study were women 18 years and older who were female residents of Esmeraldas Province

in Ecuador. These women were affiliated with FCAT as either employees of the organization or members of the surrounding community.

The Perceived Stress Scale (PSS) (Cohen, S., Kamarck, T., & Mermelstein, R., 1983.) is a 10-item instrument designed to measure the amount of stress an individual experiences in various situations in the duration of the past month. The PSS survey contains 10 questions about feelings of worry, anxiety, and anger and a person’s ability to cope with uncontrollable and stressful events in their lives (see *Table 1*). The PSS questions are scored on a 10-point Likert scale where total scores between 0 and 13 are considered low stress, scores between 14 and 26 are considered moderate stress, and scores between 27 and 40 are considered high perceived stress.

The Climate Focused Stress Scale (CFSS) (Joiner, 2025), designed by the researcher of this study, was mirrored to the design of the Perceived Stress Scale to measure the perceived stress that individuals felt in relation to climate change. It was also designed to measure the self-efficacy and agency of individuals in their desire to mitigate climate change and to understand their lived experiences in regard to climate change related events. The CFSS contains a total of 18 questions; 10 about the perceived stress they felt towards climate change (Part 1) (see *Table 1*), 4 about agency and self-efficacy in regard to mitigating the consequences of climate change (Part 2), and 4 open-ended questions about their experiences with responding to climate change related events in their community (Part 3) (see appendix A).

**Table 1 Comparison of PSS and CFSS Pt. 1 survey questions**

<b>Perceived Stress Scale (PSS)</b> (Cohen, S., Kamarck, T., & Mermelstein, R., 1983)	<b>Climate Focused Stress Scale (CFSS)</b> (Joiner, 2025)
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In the last month, how often have you been upset because of something that happened unexpectedly?	When you think about the future, how often do you believe climate change will affect you?
In the last month, how often have you felt that you were unable to control the important things in your life?	When you think about the future, how often do you believe climate change will affect your family?
In the last month, how often have you felt nervous or stressed?	When you think about the future, how often do you believe climate change will affect your community?
In the last month, how often have you felt confident about your ability to handle your personal problems?	How often have you felt that you were helpless due to climate change?
In the last month, how often have you felt that things were going your way?	How often do you feel nervous or stressed about climate change?
In the last month, how often have you found that you could not cope with all the things you had to do?	How often have you found that you could not cope with climate change?
In the last month, how often have you been able to control irritations in your life?	How often do you feel that climate change is out of your control?
In the last month, how often have you felt that you were on top of things?	How much of a concern is climate change to you?
In the last month, how often have you been angered because of things that happened that were outside of your control?	Are you able to adapt to the effects of climate change?
In the last month, how often have you felt difficulties piled up so high that you could not overcome them?	Can you recover from events that are due to climate change?

Ethnographic research was also conducted over the course of the two-week period. This included participant observation to gain a better understanding of the daily activities of the women who were affiliated with FCAT. An ethnographic lens was used to view the relationships between women in this community, as well as building trust with the women connected to FCAT by building relationships with them. For example, on random occasions separate from the semi-structured interviews, the researcher had conversations with women working in administrative and research functions, cleaning and maintenance at the FCAT station, as well as visiting women from the community who were affiliated with FCAT.

To quantitatively analyze the data, SPSS was used to calculate the descriptive statistics, frequencies, and means of each item on the CFSS Scale. To calculate the CFSS score, the questions about climate resiliency were reverse-coded. To qualitatively analyze the data, interviews were transcribed in Spanish and translated into English. Interviews were analyzed using content analysis. Transcripts were coded to identify patterns in the perspectives and experiences which women shared.

## Results

### *Study Population*

**Table 2 Age distribution of participants (n=14) FCAT, Esmeraldas Province, Ecuador**

Age (years)	Frequency (%)
25-32	42.9
33-40	21.4
41-48	14.3
49-57	21.4

The age range of the women who participated in this study were between 25 and 57 years old (n=14). The mean age was 37.5 years, and the median was 32 years of age. *Table 2* contains the breakdown of age into 4 groups and the frequencies of each group. Approximately 43% of the women were between the ages of 25 and 32 and about 21% were between 33 and 40 years of age, meaning more than half of the women were between the ages of 25 and 40. Almost 36% of the women were between 41 and 57 years of age.

**Table 3 Role distribution of participants (n=15) FCAT, Esmeraldas Province, Ecuador**

Role in the FCAT community	Frequency (%)
Employed at FCAT	46.7
Member of surrounding FCAT community	53.3

The group is divided into two categories defined by their role at FCAT (n=15). One category is employment at FCAT, and the second category is being a member of the surrounding FCAT community. Individuals who are a part of programs such as the Women's Art Collective are considered community members of FCAT. Members of the community were included in this study to address the small sample size. A total of 15 women were interviewed in this research. As described in *Table 3*, approximately 53% of the women were members of the surrounding community at FCAT and almost 47% were employed at FCAT.

### ***Perceptions & Knowledge of Climate Change***

To gain an understanding of the level of knowledge women had about climate change, prior to the Climate Focused Stress Scale they were asked questions such as “*When you hear climate change, what do you understand?*” or “*What is your perception of climate change?*” Women's knowledge about climate change will shape how they feel about its consequences in their communities. Several of the responses from women were about weather patterns and changing seasons.

*“Climate change is like the weather. From cold to hot. From hot to cold.”* Another woman said, “*...if it's raining and sunny at the same time, like the weather changes or it's cold or hot. Like right now we're feeling a change, it's getting too cold and last week it was too hot and now it's too cold for me.*”

In this study, some women were knowledgeable about climate change and the consequences of this process.

*“These are all the effects that exist in the environment as a consequence of all the activities that people do.”*

One participant’s response demonstrated her understanding of climate change as a process caused by human activity leading to consequences to the environment and the communities which people live in:

*“I think climate change is part of our every single day of our lives. So, it's a kind of change that is accelerated because of the human beings' activities. So, we are facing this now, not it's not more something that we can say in the future, in the next 30 years, or a hundred years. So, it's now, it's happening now. And the consequence of this is not only the weather is changing. But also, the way we are performing in the city, in the field. The way we are now getting our food. The water we have. So, I think it's over any single thing that we are doing now. So, our way of life is changing for now and it's part of the stress. We have conscious stress and unconscious stress that the humans have now.”*

Assessing the amount of knowledge these women had about climate change was important because it not only informed how they responded to the Climate Focused Stress Scale, but it was also an opportunity to provide climate change education to women that didn’t have prior knowledge, skillsets, or tools regarding climate change mitigation. After each woman was surveyed about their perception of climate change, they were provided a universal definition of climate change using specific examples of the consequences of climate change in their community such as droughts and floods.

*Climate Focused Stress Scale (CFSS) Pt. 1: Likert Scale*

**Table 4 CFSS Pt. 1 Likert scale distribution of participants (n=15) FCAT, Esmeraldas**

**Province, Ecuador**

CFSS Item	Mean	Standard Deviation
<b>Future Impact</b> <i>never (0), almost never (1), occasionally (2), frequently (3), and daily (4)</i>		
When you think about the future, how often do you believe climate change will affect you?	3.1	1.0
When you think about the future, how often do you believe climate change will affect your family?	3.2	1.0
When you think about the future, how often do you believe climate change will affect your community?	3.5	0.7
<b>Perceived Helplessness</b> <i>never (0), almost never (1), occasionally (2), frequently (3), and daily (4)</i>		
How often have you felt that you were helpless due to climate change?	2.5	0.8
How often do you feel nervous or stressed about climate change?	2.4	1.0
How often have you found that you could not cope with climate change?	2.7	1.0
How often do you feel that climate change is out of your control?	2.8	1.1
How much of a concern is climate change to you?	3.0	0.8
<b>Resilience (reverse coded)</b> <i>never (4), almost never (3), occasionally (2), frequently (1), and daily (0)</i>		
Are you able to adapt to the effects of climate change?	1.9	1.3
Can you recover from events that are due to climate change?	1.8	1.0
<b>Total CFSS Score</b>	<b>27.0</b>	<b>5.3</b>

**Table 5 Total CFSS score distribution of participants (n=15) FCAT, Esmeraldas Province,**

**Ecuador**

Score	Stress Level
0-13	Low stress
14-26	Moderate stress
27-40	High perceived stress

Part 1 of the Climate Focused Stress Scale (CFSS) is divided into three sections: future impact, perceived helplessness, and resilience (*Table 4*). The CFSS is a Likert scale in which participants respond to each item in the future impact and perceived helplessness sections with

the five following options that best fit their own experience with never coded as zero (0) and daily as four (4). The participants responded to the resilience questions in the opposite order (see *Table 4*).

For questions about the impact of climate change on the future of their families and communities, the average response was frequently (range = 3.1-3.5). The average response for questions about their perceived helplessness was occasionally (range = 2.4-3.0). However, the mean for the question “*how much of a concern is climate change to you?*” was frequently (3.0). For questions about climate resilience, the average response was frequently (range = 1.8-1.9). The total score for the CFSS represents the level of stress participants experienced due to climate change. Similar to the PSS, an individual’s score is calculated by averaging the participant’s answer to each item on the survey and reverse coding the resilience scores to reflect their perceived stress. Individual scores are divided into three categories: low stress (0-13), moderate stress (14-26), and high perceived stress (27-40) (see *Table 5*) like the PSS. The mean score for the study population was 27, meaning that on average participants had high perceived stress about climate change.

*Climate Focused Stress Scale (CFSS) Pt. 2: Perceived Self-Efficacy*

**Table 6 CFSS Pt. 2: Perceived self-efficacy distribution of participants (n=15) FCAT, Esmeraldas Province, Ecuador**

CFSS Item	Frequency (%)	
	Yes	No
Do you believe that you can contribute to fighting climate change?	100.0	0.0
Do you want to help fight against climate change?	100.0	0.0
Do you believe you contribute to the effects of climate change?	86.7	13.3
Do you believe your role at FCAT or role in the community is beneficial to conservation work and fighting climate change?	93.3	6.7

Part 2 of the CFSS describes whether women in the study were identified to have perceived self-efficacy in the context of mitigating climate change. Self-efficacy refers to an individual's belief in their ability to take actions that will lead to success or achievement of a particular goal (Bandura, 1999). In the context of climate change, this refers to an individual's perception of their ability to take action in reducing and decelerating consequences of climate change. Women were asked if they desired to contribute to climate change mitigation efforts and whether their role(s) at FCAT contributed to these efforts. In *Table 6*, all participants (n=15) responded with the desire to help mitigate climate change and the belief that they can contribute to mitigation efforts. When women were asked whether their role at FCAT is beneficial to mitigating climate change, 93.3% had responded *yes*. Lastly, 86.7% of the women responded *yes* when they were asked whether they believe they contribute to the effects of climate change.

*Role of Participants and Total CFSS Scores*

**Table 7 Total scores and role distributions of participants (n=15) FCAT, Esmeraldas Province, Ecuador**

Total Score and Role of Subjects						
Role of Subjects	Mean	N	Std. Deviation	Minimum	Maximum	Range
FCAT Employees	28.0000	7	6.00000	20.00	38.00	18.00
Member of Community	26.0000	8	5.00000	20.00	32.00	12.00
Total Study Population	27.0000	15	5.00000	20.00	38.00	18.00

By calculating the mean, the average CFSS score for FCAT employees was considered high perceived stress (CFSS=28) and the average CFSS score for community members was considered moderate stress (CFSS=26).

*Age of Participants and Total CFSS Scores*

**Table 8 Total scores and age distributions of participants (n=15) FCAT, Esmeraldas Province, Ecuador**

<b>Total Score and Age of Subjects</b>						
Total Score						
Age of Subjects	Mean	N	Std. Deviation	Minimum	Maximum	Range
25–32 years	28.0000	6	7.00000	20.00	38.00	18.00
33–40 years	27.0000	3	4.00000	22.00	30.00	8.00
41–48 years	28.0000	2	3.00000	26.00	30.00	4.00
49–57 years	23.0000	3	4.00000	20.00	28.00	8.00
Total Study Population	27.0000	14	5.00000	20.00	38.00	18.00

By calculating the mean, the average CFSS score for the entire study population was 27, meaning that on average participants have high perceived stress about climate change. On average, participants between the ages of 25 and 48 have high perceived stress, and participants between 49-57 have moderate stress about climate change.

*CFSS Scores*

**Table 9 Total scores of participants (n=15) FCAT, Esmeraldas Province, Ecuador**

		<b>CFSS Score</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Total CFSS Score	Low Stress (0–13)	0	.0	.0	.0
	Moderate Stress (14–26)	6	40.0	40.0	40.0
	High Stress (27–40)	9	60.0	60.0	60.00

CFSS Stress scores from this population did not contain scores that were considered low stress, however, 40% of the women scored moderate stress and 60% of the women scored high perceived stress score in relation to climate change.

Part 3 of the CFSS Scale emphasized the overall impact that climate change has on their lives, communities, and families. Not only did women share their experiences, perspectives, and strategies for coping with the consequences of climate change, but they also identified solutions and needs that would help their community adapt to climate change.

### ***Impact of Climate Change***

During the semi-structured interviews, women in this community were asked open ended questions about the impact of climate change in their lives. For example, women were asked how climate change makes them feel. They were also asked to share the role that climate change plays in their lives and their future and the futures of their families and communities. When women in this community were asked how climate change made them feel, many described being fearful.

*“... when it rains... I am very, very worried about the situation, because sometimes... there are landslides and... at least when we live near the rivers, the rivers flood and one feels that little fear that it could reach the house. Our loved ones as well, because everything affects us... when there is a lot of sun, also of concern is the drought... there are many people who do not have water... and it is very worrisome.”*

Some women also said they felt a sense of nostalgia and sadness knowing that the consequences of human activity and climate change can result in the harm and degradation of the natural environment, a concept known as *ecological grief* (Comtesse et al., 2021).

Some women reported feeling vulnerable and powerless because the consequences of climate change seemed out of their control or that they were personally not doing enough to

mitigate climate change. As mothers, they described concern for their families as they navigate the consequences of climate change and the responsibility of providing safety for their children.

*“Vulnerable? I mean, maybe because I’m a mom now and I have a different perspective, so I have someone to worry about more than anything else. So, I feel vulnerable.”*

When women were asked how climate change affects their lives and futures, their responses focused on the consequences of climate change in the lives of their families, communities, and future generations to come. For example, physical consequences of climate change this community faces are landslides, droughts, and floods. Several women shared how landslides and droughts resulted in the damage of their homes, roads, and even loss of animals.

*“When it rains too much because there are landslides, there are sunken houses, rivers swell, animals are lost. This has a significant impact.”*

Women also mentioned the ways that climate change is detrimental to their health including air and water pollution and the increased risk of tropical infectious diseases. When speaking about the future, many women framed their concern of these consequences as becoming worse for their families and communities in the future. Women repeatedly shared that they felt fear, concern, and scared for the future of their children. This emphasizes how the consequences of climate change are occurring across multiple generations and the ways each generation may be impacted differently.

*“It would be like reliving our history of drought in our family. In other words, our children would go through the same, the same problem of not having water.”*

*“... let's say if the weather was really bad now, I imagine it will be worse as time goes by. Then I fear most of all my children, my grandchildren are going to suffer at that point.”*

Some women recognize the ways that climate change will have an economic impact in their community, and perhaps even the country. Economic opportunities for many families in Ecuador involve agriculture, such as cacao production.

*“In Ecuador we have like a huge income from the agricultura. So, in the future, the weather is gonna be super extreme so the drier and the wet season too. So, I think in the future we're gonna have problems with the money income in the country and the food that we are being able to get.”*

The sentiment was that as climate change worsens, it will be detrimental to Ecuador's economy and the economic opportunities that Ecuadorians rely on to support their families. As conditions such as droughts and floods in this community become more extreme, they worry about changes in agricultural productivity including damaged crops or longer growing seasons that could affect access to food and economic stability.

*“I think that food is the first thing that it affects. The first thing that is affected is the crops in the fields and that indirectly affects the population in the city where I live.”*

In regards to the future, some women mentioned that the consequences of climate change could create more stress as it continues to affect their community. As they continue to face the challenges named above, using strategies in mitigating climate change, and finding ways to cope with the consequences is crucial.

### ***Adaptation to Climate Change***

To understand how women in this community responded to climate change in their communities, they were asked how they coped or adapted to the consequences of climate change. When women were asked about strategies they used to manage the consequences, some women

responded that they did not know how to adapt or cope. Some even responded that it's difficult to adapt to the consequences they've experienced in their community.

*"I don't know how I will be able to adapt. But either way you have to survive."*

Adapting to climate change has become about the survival of their families and communities. Women felt uncertain about the future, because the consequences of climate change could become so extreme in their community. Several women named that they adapt to the consequences because they felt that they don't have a choice but to adapt for survival.

*"It is difficult because sometimes you never know what things are going to happen at the moment, so the adaptation is constant, it is a matter of survival and every time something happens, you look for a solution. And what strategies have I found useful? It is simply surviving, surviving and looking for a solution to any problem that happens, be it environmental or personal."*

Although several had difficulties adapting, some women were able to identify strategies they used in specific situations they experienced. For example, when their families experience a shortage of water, depending on their situation, they named solutions of accessing water.

*"Well, in my case I would get up and get water from other farms because I don't have any on mine. So, I have to adapt to that and to the climate."*

For members of this community, adaptation also looks like relying on community to meet their needs. Other solutions women named when they experienced water shortages included buying water and building their own wells of water. Another strategy a woman named was staying calm and making the most out of the positive outcomes in certain situations. Adapting can simply be having a positive mindset to combat the stress of climate change.

Although, several women shared the ways that climate change will negatively impact their lives, some women were hopeful for the future. These women recognize that while their community faces challenges due to climate change, there is a possibility in which their community survives and are able to mitigate the consequences of climate change.

*“It could be that in the future it may already be changing and improving things.”*

*“Maybe we can deaccelerate... the process of this climate change. That is at least the negative effects. Maybe we can like go slow. Who knows? And if it's slow maybe we have enough time to adapt our lives to the new conditions that the earth is going to have.”*

### ***Perceived Needs and Solutions to Mitigating Climate Change***

To contribute to efforts in mitigating climate change in their community, women were asked to describe the ways in which they wanted to participate, in their own lives and within their involvement with FCAT. They were also asked to share what they needed to facilitate change in their communities. The majority of women mentioned that in order to fight against climate change in their community, they need education about climate change. They want to learn practices that will help protect the environment such as maintaining the cleanliness of their rivers, composting, and preventing harmful behaviors such as cutting down trees, burning plastic, and throwing garbage in rivers. They suggested education in the forms of talks, workshops, trainings, participation in FCAT projects, and overall raising awareness which will help them become equipped with the language, skillsets, and knowledge needed to mitigate the consequences of climate change.

*“I believe in raising conservation awareness. Taking care of the forest, restoring the forest is a way to contribute to prevent climate change, not only at a local level, but also at a global level.”*

Women also want to be informed to be able to educate members of their community, including their families. These women emphasized the importance of informing youth about climate change, as they will become leaders of their communities in the future.

*“... it is nice to see that they are preparing the new generations so that they can impart their knowledge and so that people become more motivated or more interested in conserving nature.”*

FCAT and several other local conservation organizations play a role in this community by providing resources such as education, training, and opportunities for participation in the projects they've implemented over years. Some women also described that it would be more manageable to adapt to climate change if they didn't do it alone.

*“Being part of FCAT allowed me to contribute in that way because as an organization we can ask for funding to develop projects like the ones we have here and to share this knowledge with the local community and not also here in the area. But also in Quito, with other community members of conservation NGOs but also students and other people who is interested in these aspects.”*

*“... it would be kind of easier in Union. Unity is strength.”*

Women saw unity as a strategy that will help move them forward as their community continues to face these challenges. They use power in the collective effort by encouraging others to participate in efforts to mitigate climate change which shows that they have hope for the future.

Participating in the culture and environment these women have formed emphasized the types of relationships they have to one another. As researchers participating in daily activities at the FCAT station, it was evident that there was a sense of community among this group of women in the ways that they sang, laughed, conversed, gathered and spent quality time together at the FCAT station. Not only were they a tight-knit group of women, but they also had an inviting attitude towards visitors at the station. They bonded and connected with students and researchers who visited FCAT and several women within this group even had a genuine curiosity in learning and participating in projects and activities that were conducted at FCAT. This is relevant to the ways that they want to participate in conservation work and climate change mitigation work. This sense of community these women have formed and their participation at FCAT shows the value in unity when adapting and mitigating climate change. Overall, this community of women is rooted in respect, support, and care as they worked together in their roles at FCAT and in the work of this organization and beyond to increase awareness of conservation and climate change work.

FCAT's Women's Art Collective, which is a group of local Ecuadorian women who sell crafts locally and internationally and lead printmaking workshops in the community, visited the FCAT station during the period of this study. Not only does this provide economic opportunities for women in this community, but the participation and artwork created by this group contributes to the spread of knowledge and appreciation for the natural environment. Art is an expression of their care and respect for the environment and emphasizes the ways that art has become a part of conservation work and education about the natural environment. This group of women helps communities reimagine their futures which may be a powerful tool in climate change work and as coping mechanism for the challenges that climate change brings to their communities. Their

work may also be an inspiration for communities to continue finding ways of adapting and mitigating climate change and to inspire others to do the same. The Women's Art Collective plays a role in creating hope for the future.

Near the end of the study period, a climate change education workshop was led by FCAT staff, for employees and researchers at the station. This was an opportunity for women in this community to continue their education about climate change, especially for those who may not have had as many opportunities to learn in the past.

## **Discussion**

This study highlights the connection between gender, climate change, and emotional wellbeing. FCAT is a way to understand how women participating in conservation efforts perceive climate change and the roles they play as leaders in efforts to tackle climate change. This is crucial to understanding what climate adaptation looks like in communities that are most impacted by the consequences.

Women involved with FCAT are concerned about climate change. The average total score for part 1 of the CFSS for this group of women was 27, regardless of their age or role at FCAT, which is considered to be high perceived stress about climate change. Sixty percent of women in this group had high perceived stress and the remaining forty percent of women were moderately stressed emphasizing that more than half of the women in this community are highly concerned about the consequences of climate change. When women were asked how often their futures would be impacted, on average, they felt that their futures would be frequently impacted by climate change. Their high stress scores in part 1 of the CFSS reflects their description of how climate change made them feel fear and worry due to the consequences that they've experienced

in their community such as floods, droughts, and landslides. Feelings of vulnerability and powerlessness likely contributes to high stress scores because women feel uncertain about the future of their families, communities, and the degradation of the natural environment.

Despite women's concerns about navigating the challenges of climate change, there are opportunities in which they've have shown resiliency based on the ways that they've developed self and collective agency as they adapt to the consequences of climate change. In the resilience portion of part 1 of the CFSS, on average, women were frequently able to recover and adapt from the consequences of climate change in their community. In part 2, their high perceived self-efficacy reflects the belief that they have the power to create social change in their community through climate change mitigation efforts. This group of women's ability to identify their needs and solutions to climate change also reflects their own agency and resiliency. They shared insightful perspectives about the role of community in the ways that they adapt, recover, and mitigate the consequences of climate change. Many women described sharing resources and knowledge and using collaboration as tools to help move them forward in responding to climate change. Their emphasis on unity also shows how grounded they feel, knowing that they have a support system to rely on during challenging moments in their community. Community support is a strategy in combatting the mental health consequences of climate change.

Women in this community often shared that training and education about climate change was what they needed in order to mitigate climate change. Education about climate change provides women a sense of agency and empowerment to take action towards social change in their community. Education and training are the tools they need to be equipped to mitigate climate change in their community and to share those resources with members of their community. Education plays a role in giving women and their community the knowledge and

skills to contribute to projects, research, and programs involving climate change in the ways that they desire. It also allows women to become leaders in their community and to share their own perspectives, knowledge, ideas, and skillsets.

Women's emphasis on collaboration and unity also supports this sense of collective agency that could be a powerful tool for their community in mitigating climate change. FCAT's role in the lives of these women is also crucial as they continue to empower and support women's participation in conservation work and other leadership opportunities within the organization. These women also demonstrated that shifting towards a positive outlook of the future and their ability to identify their needs and solutions provided a sense of hope and possibility. It's unique to see the ways that women are able to shift their feelings of fear, worry, and vulnerability about climate change into hope, motivation, and resilience even when the consequences of climate change can be as detrimental as they are, not knowing what the future may hold for their community and even globally.

There were women in this community who viewed their role as community development with less attention on climate change. Reasoning behind this could be that women have responsibilities and roles that deter them from focusing on climate change in their community. Women's roles at FCAT are beneficial because of their involvement in research projects, employment, and community-wide events including the Women's Art Collective, which are all essential to the functioning and work at FCAT. Being involved at FCAT is supportive of climate change mitigation efforts.

Climate change is contextual, meaning the consequences are dependent on social, political, economic, and environmental factors which influence a community's experiences, access to resources, level of vulnerability, and ability to mitigate and adapt to climate change.

Not only does climate change impact local communities, but it also poses a variety of consequences at the institutional, national, and global levels. For example, agriculture has provided economic opportunities for many households in Ecuador. As climate change continues to worsen, crop yields are at risk of declining. As a result, economic opportunities for families may dwindle, therefore negatively impacting the quality of life for households that are dependent on agriculture to sustain their families, which may also impact Ecuador's economy. Institutions including government bodies and policy makers also influence how we define, contextualize, and respond to the climate change crisis. (Tompkins et al., 2005). For example, in Ecuador, The Ministry of Environment, Water, and Ecological Transition was established to oversee the conservation and sustainability of the environment and natural resources, implementing climate change policies, and ensuring the respect of the rights of nature (MECCE, 2024; Proamazonia, 2021). This study may question the ways that climate change impacts mothers in this community because of the concerns they've shared in regards to how climate change will impact the future of their children and for generations to come. It may also question who is burdened by these consequences, the work that is required to mitigate climate change, and how these burdens continue to harm the mental health of particular communities.

It's important to recognize that each community will have their own strategies and solutions depending on the context in which they exist in. Solutions to climate change are not a one size fits all. Communities may have context specific solutions that will meet their needs during these challenges.

## **Limitations**

Although this study is insightful in understanding the complexities of climate change in the lives of women in this community, there are potential drawbacks.

Although the CFSS is mirrored to the previously validated PSS in some ways, it is not a validated instrument, nor has it been tested in other populations. Therefore, the reliability and validity of the survey is very limited. The CFSS also slightly lacks consistency and specificity of time frame. For instance, in part 1 of the CFSS, three questions out of the ten were not written in the same format of “*how often*” they agreed to these statements (see appendix B). In addition, the part 2 of the CFSS did not measure a specific time frame of how often they agreed with each statement. A specific time frame that could be implemented in this study is to ask how often they agreed to each statement within the past week, month, year, etc., similar to the original PSS.

Since the context of climate change was not previously given, providing a universal definition and asking the participants of their knowledge of climate change was implemented after the first two participants were surveyed. Without providing a proper context of climate change, participants’ responses may have been misinformed, therefore impacting the reliability and validity of the study.

Another potential drawback of the study is the power imbalance between FCAT staff who served as translators and the participants who were FCAT employees. As participants were surveyed, they may have felt pressured to respond in a particular way or may have felt that there was a “right” way to respond to survey questions. This may have caused participants to feel a level of anxiety or worry in the presence of their employer, which could have influenced their responses to survey questions.

To gain a more comprehensive understanding of the experiences of women in this community, information collected about their marriage, parenting, socio-economic statuses and

level of education may provide more context and insight in how climate change impacts their lives. Asking where and how they learned about climate change may also be useful in understanding their experiences and perceptions of climate change.

## **Conclusion**

Women connected to FCAT are concerned about the consequences of climate change in their communities. Although many women felt that it was difficult to adapt to climate change, they were able to identify strategies in coping, adapting, and mitigating the consequences of climate change. Hope, unity, and access to resources are powerful tools as women in this community continue to adapt and mitigate climate change.

The lessons learned from this research can inform us on how to improve efforts of climate change adaptation and mitigation by equipping communities with the tools, resources, and agency to do so. Not only does this research uplift the voices, perspectives, and experiences of women in this community, but it emphasizes the need to center the knowledge, narratives, and lived experiences of people with marginalized identities. Understanding the complexities of climate change and the perceived needs and solutions of a community can help us move forward as we continue to navigate climate change globally.

## References

- Causes of climate change*. (n.d.). Climate Action. [https://climate.ec.europa.eu/climate-change/causes-climate-change\\_en](https://climate.ec.europa.eu/climate-change/causes-climate-change_en)
- Causes of climate change* | US EPA. (2025, March 25). US EPA. <https://www.epa.gov/climatechange-science/causes-climate-change#:~:text=Natural%20processes%20are%20always%20influencing,explained%20by%20natural%20causes%20alone>
- United Nations. (n.d.). *What is climate change?* | United Nations. <https://www.un.org/en/climatechange/what-is-climate-change>
- World Health Organization: WHO. (2023, October 12). *Climate change*. <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>
- Climate change impacts on agriculture and food supply* | US EPA. (2025, March 25). US EPA. <https://www.epa.gov/climateimpacts/climate-change-impacts-agriculture-and-food-supply>
- Loo, A. M. H., & Walker, B. R. (2022). Climate change knowledge influences attitude to mitigation via efficacy beliefs. *Risk Analysis*, 43(6), 1162–1173. <https://doi.org/10.1111/risa.14026>
- Turrentine, J. (2022, September 13). *What are the causes of climate change?* NRDC (Natural Resources Defense Council). Retrieved July 28, 2025, from <https://www.nrdc.org/stories/what-are-causes-climate-change>
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 385–396.
- Berry, H. L., Bowen, K., & Kjellstrom, T. (2009). Climate change and mental health: a causal pathways framework. *International Journal of Public Health*, 55(2), 123–132. <https://doi.org/10.1007/s00038-009-0112-0>
- Cousins, E. M. (2021). Mobilizing motherhood: The gendered burden of environmental protection. *Sociology Compass*, 15(5). <https://doi.org/10.1111/soc4.12879>
- Demetriades, J., & Esplen, E. (2009). The gender dimensions of poverty and climate change adaptation. *IDS Bulletin*, 39(4), 24–31. <https://doi.org/10.1111/j.1759-5436.2008.tb00473.x>
- Djoudi, H., Locatelli, B., Vaast, C., Asher, K., Brockhaus, M., & Sijapati, B. B. (2016). Beyond dichotomies: Gender and intersecting inequalities in climate change studies. *AMBIO*, 45(S3), 248–262. <https://doi.org/10.1007/s13280-016-0825-2>
- Kings, N. A. (2017). Intersectionality and the changing face of ecofeminism. *Ethics & the Environment*, 22(1), 63. <https://doi.org/10.2979/ethicsenviro.22.1.04>
- Padhy, S., Sarkar, S., Panigrahi, M., & Paul, S. (2015). Mental health effects of climate change. *Indian Journal of Occupational and Environmental Medicine*, 19(1), 3. <https://doi.org/10.4103/0019-5278.156997>
- Pinchoff, J., Regules, R., Gomez-Ugarte, A. C., Abularrage, T. F., & Bojorquez-Chapela, I. (2023). Coping with climate change: The role of climate related stressors in affecting the mental health of young people in Mexico. *PLOS Global Public Health*, 3(9), e0002219. <https://doi.org/10.1371/journal.pgph.0002219>
- Singer, N. R. (2020). Toward intersectional ecofeminist communication studies. *Communication Theory*, 30(3), 268–289. <https://doi.org/10.1093/ct/qtz023>
- Bandura, A. (1999). Self-efficacy: Toward a unifying theory of behavioral change. In R. F. Baumeister (Ed.), *The self in social psychology* (pp. 285–298). Psychology Press.
- Coffey, Y., Bhullar, N., Durkin, J., Islam, M. S., & Usher, K. (2021). Understanding eco-anxiety: A systematic scoping review of current literature and identified knowledge gaps. *The Journal of Climate Change and Health*, 3, 100047. <https://doi.org/10.1016/j.joelc.2021.100047>
- American Psychological Association. (n.d.). American Psychological Association. <https://www.apa.org/topics/resilience>
- Cermak, A. (2024, December 4). *Mitigation and Adaptation - NASA Science*. NASA Science. <https://science.nasa.gov/climate-change/adaptation-mitigation/>
- Turğut, F. S., & Öztürk, M. (2025). Understanding eco-anxiety: A systematic scoping review of current literature and identified knowledge gaps - sciencedirect. <https://www.sciencedirect.com/science/article/pii/S2667278221000444>
- Shiva, V. (2016). *Staying alive: women, ecology, and development*. (Original work published 1989)
- Ergas, C., McKinney L., Bell S., (2021). Intersectionality and the Environment. *Handbook of Environmental Sociology*, Springer. (15-34).
- The new normal of 'Climate Grief': Why mental health must feature in adaptation and resilience planning*. (n.d.). UNU-CRIS. <https://cris.unu.edu/new-normal-%E2%80%98climate-grief%E2%80%99-why-mental-health-must-feature-adaptation-and-resilience-planning>
- Comtesse, H., Ertl, V., Hengst, S. M. C., Rosner, R., & Smid, G. E. (2021). Ecological grief as a response to environmental change: a mental health risk or functional response? *International Journal of Environmental Research and Public Health*, 18(2), 734. <https://doi.org/10.3390/ijerph18020734>
- MECCE. (2024, December 12). *CCE Country profile: Ecuador - MECCE*. [https://mecce.ca/country\\_profiles/cce-country-profile-ecuador/](https://mecce.ca/country_profiles/cce-country-profile-ecuador/)
- Proamazonia. (2021, July 13). *ROLE OF THE MINISTRY OF ENVIRONMENT AND WATER IN ECUADOR - ProAmazonia - Programa Integral Amazónico de Conservación de Bosques Sostenible*. <https://www.proamazonia.org/en/rol-del-ministerio-del-ambiente-y-agua-en-el-ecuador/>
- Social connections key to maintaining mental well-being*. (n.d.). <https://www.psychiatry.org/news-room/apa-blogs/social-connections-key-to-maintaining-mental-well>
- Tompkins, E. L., & Adger, W. N. (2005). Defining response capacity to enhance climate change policy. *Environmental Science & Policy*, 8(6), 562–571. <https://doi.org/10.1016/j.envsci.2005.06.012>
- Anjum, G., & Aziz, M. (2025). Climate change and gendered vulnerability: A systematic review of women's health. *Women S Health*, 21, 17455057251323645. <https://doi.org/10.1177/17455057251323645>
- Puleo, A. H. (2017). What is ecofeminism. *Quaderns de la Mediterrània*, 25, 27-34.
- Sharma, D. K., & Singh, H. (2025). Discourse on Ecofeminism: A Review. *International Journal of Language, Literature and Culture*, 5(3), 618564.
- Bertana, A., & Blanton, N. (2025). Ecofeminism. *The Blackwell Encyclopedia of Sociology*, 1-5.
- Joiner, T. (2025) An Ecofeminist Approach to Climate Change at a Conservation NGO in Ecuador. Capstone Independent Study. Celia Sott Weatherhead School of Public Health, Tulane University. New Orleans, LA, USA

## Appendices

### *Appendix A*

#### *CFSS Part 3 Survey Questions*

This appendix contains 4 open-ended questions from Part 3 of the CFSS. The purpose of this section is to draw connections between the results of Part 1 and 2 of the Climate Focused Stress Scale and the life experiences of women in the FCAT community, while centering their narratives, voices, knowledge, and perceptions of climate change.

1. *How does climate change make you feel?*
2. *How do you think climate change affects your life? How do you think this will impact your future?*
3. *How do you want to contribute to fighting climate change in your community? How can your involvement with FCAT be beneficial to the fight against climate change? What do you need to do this?*
4. *How do you cope or adapt to climate change? What strategies have you found helpful?*

## *Appendix B*

### *Appendix B*

#### *CFSS Part 2 Survey Questions*

This appendix contains three questions listed in part two of the CFSS. As described in the limitations of this study, these questions were not written in the same format as the other eight questions listed in part 1.

1. *How much of a concern is climate change to you?*
2. *Are you able to adapt to the effects of climate change?*
3. *Can you recover from events that are due to climate change?*