

PERCEPTIONS OF NATURE AMONG PEOPLE EXPERIENCING HOMELESSNESS

by

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A thesis submitted to the Graduate Council of
Texas State University in partial fulfilment
of the requirements for the degree of
Master of Science
with a Major in Sustainability Studies
May 2023

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ACKNOWLEDGMENTS

I'd like to thank my wonderful graduate committee, Dr. Norton, Dr. Clary, and Dr. Velez, without which this thesis would not have been possible.

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ABSTRACT

This research is a phenomenological exploratory study conducted with people experiencing homelessness and food insecurity to determine their perceptions of nature, both positive and negative. This study utilized the theoretical frameworks of biophilia, ecological systems theory, social-ecological model, and risk and protection factors to understand the human-nature connection and the importance of nature to human wellbeing. Grounded theory was utilized to investigate how people experiencing homelessness and food insecurity's lived experiences influenced their views of nature. Data from semi-structured interviews was transcribed and coded to identify specific themes that supported the theoretical frameworks of the study. The overall findings showed that people experiencing homelessness and food insecurity do have both positive and negative perceptions on nature. They use the positive perceptions to help them create protective factors for themselves, and they use negative perceptions of nature to be aware of the risks of being out in the elements. Findings also showed that this population is aware of the environmental risks of land, water, and air pollution, and they take direct action to remediate this issue by engaging in conservation behaviors, such as picking up litter. The implications of this study include the possible utilization of nature in targeted mental health interventions for people experiencing homelessness and food insecurity. Based on data collected about how participants use nature to heal themselves, shelters could create nature-based mindfulness activities for this population to help them heal from their physical and mental health challenges. The implications from this study also support exploring the possibility of this population being a conservation workforce resource. This way, they could receive income for conservation efforts they already do, which would help them escape homelessness and better care for themselves while using the skills they built while living in nature or experiencing homelessness.

I. INTRODUCTION, PURPOSE, AND POSITIONALITY

Introduction

Homelessness is a serious problem in the United States of America. As of January of 2020, a point in time count revealed 580,466 people were experiencing homelessness in the USA (National Alliance to End Homelessness, 2022). That is 18 people experiencing homelessness out of a population of 10,000 people. Between 2007 and 2020, 70% of those experiencing homelessness were individuals, and 30% were people in families. Of those individuals, 6% were unaccompanied youth, which is a person under the age of 25. Some people experiencing homelessness were chronically homeless. This means they were either continuously homeless for a year or had experienced homelessness in the last three years adding up to one year. Chronically homeless people made up 19% of the whole measured homeless population. Men are more likely to be homeless than women, with 22 out of every 10,000 men being homeless and 13 out of every 10,000 women being homeless (National Alliance to End Homelessness, 2022).

Rates of homelessness can be higher based on the race of each person, when compared with average rates of homelessness. Native Hawaiians and Pacific Islanders' homelessness rates are 109 people experiencing homelessness out of a population of 10,000, Native Americans have rates of 45 out of 10,000, and Black people have rates of 52 out of 10,000. Multi-racial people have rates of 39 out of 10,000, Hispanics have rates of 22 out of 10,000, White people have rates of 11 out of 10,000, and Asians have rates of 4 out of 10,000. This data does not reflect how the Covid-19 Pandemic affected the homelessness crisis. In 2023, more point in time data on homelessness can be collected, to see if it has decreased the prevalence of homelessness or increased homelessness in the USA. (National Alliance to End Homelessness, 2022).

According to the literature, people experiencing homelessness have a lot of perceived stress and mental health challenges (Durbin et al., 2019), as well as physical health problems (White & Newman, 2015). Most have a history of trauma and reduced resilience levels (Keane et al., 2016). Whether or not they are experiencing homelessness as a sheltered or unsheltered person plays a role in their stress levels (Anderson et. al, 2021). This background on stress and physical health challenges is important to understand within the homeless population, so that we, as researchers, can understand how to help reduce stress and enhance mindfulness of the people experiencing homelessness through understanding and supporting their time spent in nature.

Perceived stress and mental health challenges may worsen if the person experiencing them avoids seeking care. Koegel (1992) explains in an anthropological qualitative study that people with mental health issues who are experiencing homelessness avoid seeking traditional mental health care due to not being able to access care. Accessing care for mental and physical health problems has great obstacles. For example, people experiencing homelessness had to deal with a 7-month wait for trying out a drug program for HIV positive people that offers regular medical care to participants. One man who was experiencing homelessness and simultaneous mental health issues was accepted into the program but decided not to participate. He made this choice because there was not enough time for in-depth personal interactions that he craved as a person experiencing homelessness with a lack of interpersonal interactions and relationships. His rage on knowing this kept him from accessing the health services and starting treatment. Furthermore, short term adaptations that helped people experiencing homelessness avoid conflict, like hostile shouting at strangers, similar to schizophrenia or other disorders, cause obstacles to accessing care or food in the long term (Koegel, 1992). These people were followed over the course of years, and it was found that some of the more obvious disordered or aggressive actions went

away when these individuals were stably housed and working (Koegel, 1992).

It is important for people experiencing mental health challenges to be able to access the treatment voluntarily. Twenty-four percent of Post-Traumatic Stress Disorder (PTSD) cases occurred when patients were subjected to hospitalizations against their will. These patients were all schizophrenia patients who were experiencing homelessness. (Meyer et. al. 1999). Therefore, social workers and others in helping professions struggle to find effective interventions to address these challenges among people experiencing homelessness. Requiring people to enter hospitals against their will when they are suicidal has increased suicide risks and attempts immediately after being released from the hospital they were put in against their will (Ward-Ciesielski & Rizvi, 2021). Some proposed interventions in California include voluntary access to care by way of court order, with the support of a public defender, with threats to make it forced care in locked facilities if they refuse to comply "voluntarily" within a certain time frame. Once it becomes forced care, the courts make the person a ward of the state and sanction governments refusing to provide care (Gong and Barnard, 2022). However, this could lead to PTSD and suicide, based on studies mentioned directly above. Maintaining a healthy mind is important for a positive outcome and an end to homelessness among those who are experiencing it.

Traditional mental health services do not always work in helping homeless populations, because interventions are often pathologizing and focus on deficits rather than strengths (Chafetz, 1992). This is why Chafetz (1992) suggests focusing on the strengths of people experiencing homelessness. Strengths may include short term adaptive strategies to avoid harm and organize belongings. One such example is when women experiencing homelessness wear all their clothing at once to deter men from raping them and store it on their body without having to carry it.

These skills of organization and risk preparation can be transferrable skills used in the workplace once the person is sheltered (Koegel, 1992). Mental health services for the people experiencing mental illness and homelessness ought to include skill-building (Rowe et. al., 1996) and restoring connection to self, others, and the natural world (Norton, 2020). However, nature-based interventions are being utilized without a full understanding of how people experiencing homelessness perceive nature.

In order to better address the intervention needs of people experiencing homelessness, it is important to examine their perceptions of nature and the impact of spending time in nature. This phenomenological study aimed to discover the perceptions of nature among people experiencing homelessness and food insecurity. These perceptions will be based on their time spent in the natural world.

The poor health in people experiencing homelessness and food insecurity (PEHFI) and the lack of knowledge on how time spent in nature helps them can be researched by doing a phenomenological study on PEHFIs feelings and perceptions about nature. This will allow us to explore PEHFIs lived experiences based on their time spent in nature.

Purpose of the Study and Objectives

I aimed to assess the needs of the PEHFI and how they are met by nature, assess the strengths of the PEHFI and how they use nature to make themselves stronger, and assess the perceptions towards nature held by the PEHFI. Furthermore, I aimed to assess the negative and positive impacts of PEHFI spending time in nature, both on nature itself and on these people. Finally, I aimed to suggest how time spent in nature may be used as an intervention.

Positionality of the Researcher and its Importance to the Research

As the primary researcher, I have experienced homelessness firsthand and found nature to be healing during and after that experience. I am a trained environmental educator who wants to explore perceptions on nature in others who are experiencing homelessness. The aims of this study were to examine the perceptions of nature among people experiencing homelessness. Once we know the baseline perspectives on nature of people experiencing homelessness, we may be more able to explore how nature proves beneficial to them and if they perceive nature to be a protective factor in their lives.

As this is an exploratory study, we do not have a hypothesis, but there are several research questions I will pose, using my knowledge and lived experiences to gain insights into their perceptions on nature. Read on to learn more.

II. LITERATURE REVIEW

Risk and Protective Factors Present in Homelessness

Risk factors are any component in the lives of people that are likely to cause a negative result in the person's life. This risk can be cultural, physical, mental, family-related, or community-related (SAMHSA, 2022). Protective factors are events or components that counter risks, such as self-control and positive self-image (SAMHSA, 2022). Mindfulness-based nature therapy can increase both of these protective factors (Passmore & Holder, 2017; Norton et. al 2020), which then decreases the risk factors associated with homelessness, discussed below (SAMHSA, 2022).

Mental Health Challenges

Maintaining a healthy mind is a major struggle for people experiencing homelessness. They commonly struggle with anxiety, depression, and trauma. Durbin et al. (2019) has shown in their multivariate analyses that perceived stress in homeless people with a mental disability is lower with social support, social functioning, and number of days stably housed. They also found that resilience is increased as social support and social functioning increased in this two-year-long study. In their sample of 507 homeless people in Toronto, Canada, participants suffered from depression, schizophrenia, mood disorders, panic disorders, psychotic disorders, and PTSD. Social functioning means being able to measure how much time has the person taken away from social activities to cope with emotional and physical problems. They also asked about social satisfaction and social competence, or how others react to them. Housing was considered stable when they were expected to be living some place for 6 months or more and had a lease or were with trustworthy family members that wouldn't throw them out. Durbin et al. took resilience scores at the 12-month mark and the 24-month mark, and found a 16% increase in social functioning, with an 8.9% increase in resilience and a 16.6% decrease in perceived stress (2019).

Keane et al. (2016) learned that Australians experiencing low housing stability and social disadvantage as adults, with an average age of 19, had a history of childhood trauma that could be categorized into experiencing multiple traumas from within the care provider's home and the outside world, or experiencing trauma from one or the other places. Keane et al. (2016) discovered gender-specific interpersonal trauma, with girls experiencing more sexual trauma and boys experiencing more physical abuse. People experiencing trauma both inside and outside of the home environment were also attacked by more strangers than people who only were abused in one place or the other (Keane et al. 2016). For this reason, young adults with PTSD experiencing homelessness may have trouble with social functioning as Durbin et al. (2019) discovered, especially in a state of not being in a stable living situation.

People experiencing unsheltered homelessness have quantifiable health problems and social struggles the more days they sleep outdoors within a week (Anderson et. al, 2021). Anderson et. al. defined unsheltered people as those who slept outside in a tent, outside without a tent, in an abandoned building, in a car, or in jail (2021). Sheltered people included people sleeping in shelters, hotels, or with friends. Multivariate fixed-effects linear regression models were used to assess the self-reported general health and emotional health of 246 unsheltered people. Women had worse general health than men, and people who spent only one night indoors per week had 1.8 points higher general health scores than those spending all nights outdoors. Those who experienced a conflict with a person they had a social connection with had lower emotional wellbeing than those without conflicts (Anderson et. al, 2021).

This may influence how women and men perceive nature. The experiences they have as unsheltered people, and how the experiences effect those of their gender may cause them to

perceive nature as something negative. This may be particularly difficult for women, who were sicker than men in the study population of 246 people experiencing homelessness in Nashville, Tennessee, between August 2018 and June 2019 (Anderson et. al, 2021).

Physical Health Challenges

Maintaining a healthy body is a major struggle for people experiencing homelessness. These health struggles include insomnia, hypertension, obesity, Type 2 diabetes, Chronic Obstructive Pulmonary Disease (COPD), tuberculosis, other respiratory problems, and cardiovascular disease. In a sample of 331 Los Angeles people experiencing unsheltered homelessness in Los Angeles, 62% were found to also be experiencing insomnia, which significantly improved when these people had access to permanent supportive housing (Henwood et al., 2019). Those experiencing homelessness have the same prevalence of diabetes in their population as those not experiencing homelessness, which is between 6.8 to 9.2% (Lebrun-Harris et al., 2013), but lack of access to medical health care means that some diabetes in the homeless population goes unreported. White and Newman (2015) reported that people experiencing homelessness prioritize access to food and shelter over getting medical care. This is relevant to our concern with people experiencing food insecurity and what they might choose to focus on, in order to access food. Obesity and hypertension are also found at the same levels in the homeless population as in the general population (Bernstein et. al., 2015 & Koh et. al. 2012).

Respiratory health is problematic for people experiencing homelessness. In Tennessee, out of a population of 145, 30.9% reported having asthma (Anderson et. al., 2021), and 14% of 1,336 people in England experiencing homelessness had COPD (Lewer et al. 2019). Find And Treat is a van service funded by the National Health Service (NHS), based in University College London

(Burki, 2022). The Find and Treat van is filled with a team of medical professionals who drive around the UK looking for homeless people to treat for medical issues, with a primary focus on tuberculosis. They administer Covid-19 vaccines and booster shots and fight omicron SARS-CoV-2 infections. They have administered 100,000 screenings. They have found tuberculosis, pneumonia, and early onset COPD in the homeless population (Burki, 2022). Sinus infections made up 40% of the acute conditions people experiencing homelessness faced (O'Connell, 1991). Between 1986-1988, in Boston, respiratory diseases caused 20% of deaths in homeless populations. Sixteen percent of the deaths caused by respiratory diseases were from tuberculosis and 44% was caused by pneumonia (O'Connell, 1991).

Tuberculosis is an especially important challenge. People experiencing homelessness huddling together for warmth has increased the spread of tuberculosis (Burki, 2022). Tuberculosis rises when economies crash (Burki, 2022). Latent tuberculosis has been reported to be between 9-79% (Barry, et. al., 1986; Bosek et. al., 1999; Paul et. al., 1993), while active disease prevalence is reported to be between 1.6-6.8%. In San Francisco homeless populations, the incidence of tuberculosis is estimated to be 270 cases per 100,000 people per year (Moss et. al., 2000). Being HIV positive, having a recent infection, and being nonwhite is strongly correlated with having tuberculosis, but not the use of crack cocaine, intravenous drugs, or alcohol (Moss et. al., 2000). However, according to Find and Treat, the use of crack cocaine and smoked tobacco in the homelessness population increases the risk for tuberculosis, along with breathing car exhaust when sleeping outside (Burki, 2022). X-rays showed extensive damage in the lungs of cocaine smokers due to thermal airways injury causing alveolar macrophage death, increasing the risk for infections (Burki, 2022). There are hardly any services to help people experiencing homelessness to quit smoking despite many having the desire to do so (Burki, 2022).

People experiencing homelessness are 61-71% more likely to be suffering from cardiovascular disease than people not experiencing homelessness, according to an 11-year study completed in homeless shelters in Canada (Hwang et. al 2009). The most common cardiovascular disease was found to be ischemic heart disease (Hwang et. al 2009). According to a 15-year study, for homeless adults aged 45 and older, heart disease is the second leading cause of death, and they are 2-3 more times likely to die than people this age who are not homeless (Baggett et al, 2013). The homeless population is aging, and the median age of a person experiencing homelessness is 50 years (Culhane et. al., 2013). The higher traditional risk factors of increased cigarette smoking and not controlling hypertension or diabetes, plus the higher non-traditional risk factors like increased chronic stress, depression, heavy alcohol use, cocaine use, and HIV create the increased risk for mortality from cardiovascular disease in homeless populations (Baggett et. al., 2018).

How Nature Supports Physical and Mental Health

Given the risk factors of people experiencing homelessness, it is essential to examine prior research that has studied the physical and mental health benefits of time spent in nature. There is a strong body of literature that provides evidence that time spent in nature, doing activities that engage all five senses, including sight, sound, touch, taste, and smell, leads to mental and physical relaxation. Kaplan and Kaplan (1989) discovered that connecting people with their five senses to experience nature has a direct effect on the parasympathetic nervous system, which leads to heightened awareness and increased physiological relaxation. According to Song et al.'s literature review (2016), nature therapy increases immune function recovery and is, therefore, a type of preventative medicine protecting against catching viruses or other diseases. Song et. al. (2016) also discovered that several studies found that only 15 minutes of walking in nature will

lead to a significant decrease in blood pressure. Some of these studies had large sample sizes, including over 400 people, and others were smaller with a variety of limitations.

Hansen et al. (2017) reviewed hundreds of scientific articles and found 64 articles related to nature therapy, measuring its success in their literature review. They found that the research was skewed to have small sample size, be homogenous in gender and age, and sampling was skewed in favor of sampling only one gender for study convenience. This does add bias to each study, but since human bodies all experience some similar shifts in psychological and physiological effects when in contact with nature, at some level, the results of these small studies are valid (Hansen et. al., 2017). All participants in the studies were stably housed, and none of them were homeless or at risk of homelessness.

The results of Hansen et al.'s literature review showed many studies have supported the psychological and physical benefits of nature therapy on humans, especially cardiovascular benefits (2017). When a group of 625 Japanese males were put in two groups and compared, the males in 57 forest sites had an increase in their heart rate variability of 80% compared with the males in 57 urban city areas (Kobayashi et al., 2015). Heart rate variability is the length of time between each heartbeat, that if varied, shows that the parasympathetic nervous system is activating. As Kaplan and Kaplan earlier found, an active parasympathetic nervous system leads to physiological relaxation (1989). If the length of time between each heartbeat remains the same, then that shows more activation of the central nervous system, which does not lead to relaxation. Kobayashi et al. also showed a blood pressure decrease in men who were exposed to nature as compared to the urban environment, where they walked on city streets (2015). Other smaller studies comparing females and males reviewed by Hansen et. al. showed the same results

in decreased blood pressure and increased heart rate variability (2017). Grazuleviciene et al. showed that walking for 30 minutes each day for seven days in a row in a park, as compared with walking that way on an urban city street, created cardiovascular relaxation, which improved coronary artery disease patients' heart function (2015). Significant increases were found in heart rate recovery and exercise duration in the group that walked in the park, which did not happen to the group walking in the urban street environment (Grazuleviciene et al., 2015).

In addition to cardiovascular benefits from spending time in nature, there are also benefits for those experiencing diabetes and respiratory diseases. Diabetes and respiratory diseases responded favorably to nature-based therapies in housed populations. Twenty COPD patients had less pro-inflammatory cytokines and stress hormones when exposed to nature, which helped them feel better (Jia et. al., 2016). Blood glucose levels decreased over time when 48 people with Type 2 Diabetes spent time in nature (Ohtsuka, 2012).

Further studies reviewed in Hansen et al. (2017) showed the reduction of reported anxiety and depression due to time spent in nature by housed people. Morita et al. (2011) studied 71 men and women living with insomnia in which participants went on forest walks for two hours over the course of 8 weekend days during September to December of 2005. The amount of time they slept increased, according to the questionnaire and the wrist actigraph measuring their sleep, and their reported depth of sleep and sleep quality increased. Some were able to take healing naps after their mild exercise walk, which helped heal their sleep deficit. Anxiety was reduced after forest walks, according to the State-Trait Anxiety Inventory A-State Scale (STAI-S) (Morita et al., 2011). A remission in clinical depression in patients diagnosed with major depressive disorder happened to 61% of participants in a study combining Cognitive Behavioral Therapy

(CBT) and forest walks, whereas those patients with major depressive disorder participating in only office-based CBT had a 21% clinical depression remission (Kim et. al. 2009). Morita et al. (2007) surveyed 498 people, and those with chronic stress were identified. The chronically stressed people claimed that they had the largest decrease in hostility and depression when spending time walking in nature as compared to the control environment where they also walked, based on findings from the Multiple Mood Scale-Short Form and the STAI-S. These participants went on two forest walks for approximately two and a half hours over the course of 4 days, filling out a pre and post survey. The ANOVA showed that in the forest, the more anxious ones felt stronger benefits than healthier ones, and women experienced more benefits than men (Morita et. al, 2007). This is important for the purposes of our study, because women experiencing homelessness are sicker than men (Anderson et. al, 2021).

Marchand et al. (2019) conducted psychological research with veterans aged 31-70, with a mean age of 55, who had psychiatric disorders and substance abuse disorders. Researchers combined sailing in nature with training veterans in mindfulness. Once veterans were trained in mindfulness, they went out on the water and helped seasoned skippers to sail as well as do mindfulness-based activities on the boat, like meditations in nature. They discovered significant decreases in anxiety and increases in mindfulness after the nature-based mindfulness interventions. They used the following quantitative psychological assessment tools: STAI Y-6 Item, AAQ-2, and FFMQ. (Marchand et al., 2019)

College undergraduates were assigned to notice nature by taking photos of it for two weeks and describing how nature made them feel (Passmore and Holder, 2017). Students taking pictures of nature had more elevating experiences, an increased overall positive affect, an increase in

prosocial orientation, and a larger sense of connectedness to people, nature, and life than students who took pictures and wrote feelings about human-built objects or scenes (Passmore and Holder, 2017). This qualitative research shows significant differences in the feelings of participants looking at nature and the themes they stated, as compared to the students looking at built environments, such as buildings, sidewalks, parking lots, and built objects like a bottle or a backpack. The researchers think that the intervention is beneficial to use for an increase in positive psychology. Positive psychology can be described as positive affect and prosocial attitudes (Passmore and Holder, 2017).

Benefits of Nature for People Experiencing Homelessness and Food Insecurity

The aforementioned studies about the physical and mental health benefits of nature seem to support the idea that nature-based therapies would provide a protective factor that could help those experiencing homelessness sustain their strength through their stress, physical health issues, and mental health issues and increase resilience and positive outcomes. The idea of providing nature-based therapies to people experiencing homelessness has been unexplored in the literature up until very recently. Therefore, there is a need for further studies in this specialty.

Only one study was found in the literature that examined the impact of outdoor adventure therapy with women experiencing homelessness. In this study, nature-based activities were shown to increase hope and wellbeing. Norton, et al (2020) studied the impact of the HOPE Adventure Therapy program, which utilized outdoor adventure therapy with women who were homeless shelter residents. Using the Hope Scale and the Outcomes Rating Scale, this exploratory, quasi-experimental study measured differences in hope and wellbeing, between women who participated in the HOPE Adventure Therapy program, and those who did not.

Findings from this study showed that women who participated in adventure therapy reported significant improvements in social and interpersonal well-being, and higher attendance in adventure therapy predicted larger improvements in well-being for female shelter residents. Implications of this study encourage further exploration of outdoor adventure therapy and other nature-based interventions with people experiencing homelessness and stress related to food insecurity.

Positive and Negative Perceptions of Nature

Though there is a lot of research about the benefits of nature, there is little research about how specific groups of humans perceive nature. According to Gullone (2000), humans struggle when they are not in open savannah-type environments or are facing environmental threats humans evolved to be afraid of, such as snakes and spiders. Our ancestors evolved in East Africa in the savannah (Gullone, 2000). In one study, when 439 adolescents aged 11-18 were asked their three greatest fears, they listed spiders, snakes, heights, enclosed places, sharks, and dogs (Lane and Gullone, 1999). Humans prefer a landscape that includes a body of water (Bernaldez et al., 1989), but not a stormy sea or a body of polluted water that may pose a risk (Ulrich, 1993). Since the people experiencing homelessness cannot be certain of their access to an open savannah-like area or a clean body of water, this can contribute to their stress and perspectives on nature. Biophobia is the fear of life or lifelike processes. This could include things like sharks and snakes. Biophobia is likely to affect the unsheltered people, because they come into direct contact with dangerous wild animals while living outside or being precariously housed in hotels, cars, and shelters. If this is true, this biophobia would affect their perspective on nature. This concept may be especially relevant to people experiencing homelessness, but until now, this population's perceptions of nature have never been studied.

III. THEORETICAL FRAMEWORK

Biophilia Hypothesis

Gullone (2000) described E.O. Wilson's Biophilia Hypothesis as human's innate tendency to focus on life and lifelike processes. As a result of humans' positive affinity for nature, Wilson found more children and adults visit zoos than all the major professional sporting events combined (Gullone, 2000). Wilson believed that genes and culture evolved together over our long history of hunter-gatherers, who only recently developed technology, to help our species be aware of extracting, processing, and evaluating data from the natural world around us. Natural selection favored human genotypes that would express themselves a certain way culturally towards feeling positively towards nature (Gullone, 2000).

This exploratory research fits within this theory, as it offers to use the innate connections that all humans have to nature to soothe the stresses of people experiencing homelessness. Exploring people's perceptions of nature who are experiencing homelessness will help us better understand their inherent love for the natural world, which all humans possess, according to the biophilia framework. This is supported by prior research described above about positive affect and effects of nature observation on undergraduate students taking photos of nature (Passmore and Holder, 2017).

Ecological Systems Theory

According to the ecological systems theory, created by psychologist Urie Bronfenbrenner, humans struggle when they do not have communities (Guy-Evans, 2020), which is a major difficulty for those experiencing homelessness. Ecological systems theory places a human at the center of ever-expanding circles of influence (Guy-Evans, 2020). The microsystem of the person

describes the effects of family, religion, school, and work officials on that person and that person's effects on them. The mesosystem involves the effects of each microsystem on each other like the school's effects on the church, and vice versa (Guy-Evans, 2020). The exosystem includes the effects of the media and the neighbors on the person and other wider circles. In the 21st century, this includes social media. The macrosystem includes the effects of the culture on the person and vice versa (Guy-Evans, 2020). The chronosystem shows the effects of the environmental changes that happen over the course of a person's life such as going through puberty (normative) and having to move to another house because parents divorced (non-normative) (Guy-Evans, 2020). The person at the center influences the people and institutions in the outer circles (Guy-Evans, 2020).

Kelly and Coughlan's (2019) recent theory in youth mental health recovery, based in constructivist grounded theory analysis and the building blocks of ecological systems theory, found that the youth recovered from mental health problems better when surrounded by a helpful peer group, family, and school environment. This was a part of the ecological context of influential relationships (Kelly and Coughlan, 2019).

Social Ecological Model

The Social Ecological Model by McLeroy et al (1988) describes the intrapersonal and interpersonal relationships humans have, which are important to health and development. When these relationships are missing as they are during times of homelessness and food insecurity, the individual suffers stress (McLeroy et al., 1988). According to the model, human behavior is affected by 5 levels of circumstances: one, the intrapersonal, which includes that person's knowledge and self-discipline, two, intrapersonal, which includes that person's peers and family

groups, three, organizational, which includes churches, community organizations like shelters, and stores, four, community, which includes social networks both physical and virtual, and five, public policy, which includes local, state and federal policy. Nooe et al. (2010) showed in their variation on the social ecological model that environmental circumstances, individual circumstances, and socio-economic structures played a role in a person's homelessness.

According to the National Health Care for the Homeless Council (2016), people experiencing homelessness need a lot of resources and support systems to meet their daily needs and to attain permanent housing. These resources and support systems are captured in the abovementioned model including the 5 levels of circumstances.

Risk and Protective Factors Framework

This study is also based on a risk and protective factor framework to determine if nature might be utilized as a protective factor for people experiencing homelessness and food insecurity.

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), a protective factor is an event or characteristic that lowers the impacts of risks or increases the likelihood of a positive outcome (SAMHSA, 2022). Risk factors are characteristics or events that are likely to lead to negative outcomes. Some examples of risk factors are drug addictions and mental illness, while some examples of protective factors are social competence and self-esteem (SAMHSA, 2022). This study aims to explore perceptions of nature to see if nature might be a protective factor to these participants experiencing homelessness. In the example above of negative perceptions of nature, these things were also risk factors. They consisted of animals or situations which could hurt you, given the chance. A clean body of water in an open savannah type environment, besides being perceived as a positive, is a protective factor, providing water and shelter.

IV. RESEARCH QUESTIONS AND ASSUMPTIONS

Initially, this research was going to focus on practicing mindfulness in nature with people experiencing homelessness, and whether or not their perceptions of nature changed as a result of these activities. However, due to a lack of participation in the mindfulness-based nature activities because of extreme heat, as well as the transient nature of this population, limited data was collected in this area. Therefore, the primary focus of this study became exploring the perceptions of nature among people experiencing homelessness or food insecurity (PEHFI), and how this affects them.

Preliminary Research Questions

- 1) How do people experiencing homelessness or food insecurity (PEHFI) perceive nature?
- 2) How do race, gender, or age affect nature perceptions, biophilia, biophobia, or overall described anxiety in PEHFI?
- 3) Do PEHFI experience any sense of purpose, nature-based behaviors, or connectedness to nature, themselves, and other humans?

Assumptions

Several assumptions were made when conducting this research. One was that PEHFI's feelings and perceptions on nature influence their decisions. A second was that nature affects PEHFI's daily lives and health. A third was that participants will answer honestly to the interview questions during the interview. This result was gained through building rapport.

V. METHODS

Introduction to Phenomenological Research

This is an exploratory phenomenological research approach of constructivist grounded theory. Grounded theory uses continuous data collection and comparison to generate new theories (Glaser & Strauss, 1967). Constructivist grounded theory takes a reflexive stance by considering the positionality of the researcher which includes their subjective contribution and the preexisting knowledge of the research area (Charmaz, 2014). Since the researchers conducting our study also have experience and academic training in environmental education (Lindsley), people experiencing homelessness and food insecurity (Velez & Clary), and nature-based mindfulness activities (Norton), constructivist grounded theory is the most appropriate methodology for our study.

Phenomenological research in the social sciences such as psychology is focused on what the actor or participant in the research is becoming, rather than a strict methodology that predicts things about people, with a hypothesis which looks to be supported or not supported by the data that is collected (Colaizzi, 1978). Phenomenology seeks to understand the human experience through the subjective descriptions of the actor having the experience and describing the experience (Colaizzi, 1978), rather than treating the person as an object with parameters that can be measured because they are observable, measurable, and verifiable by other observers (Valle & King, 1978). The second type of study is conducive to creating and testing hypotheses, but the first type is subjective and is phenomenological in its process of understanding the human experience (Valle & King, 1978). Since our research seeks to describe what the PEHFI are becoming as they share their perceptions on nature with us and doing nature-based mindfulness

activities, a phenomenological methodology is ideal for our study.

Sample Population

A. Participants, Incentives, and Location

Participants were recruited from the South Side Community Center (SSCC) by means of a flyer for the first week of the study. I recruited participants during the week of July 6, 2022. I continued to recruit more participants in between conducting interviews. Initial semi-structured interviews started the week after July 6, 2022, and continued through September 8, 2022. Semi-structured interviews were designed to explore people's perceptions of nature, based on their experiences being homeless. South Side Community Center is located at 518 S. Guadalupe St. San Marcos, TX 78666. I had permission from SSCC to attend the dinner meal at 3 or 4 PM served in the parking lot of the South Side Community Center, and gently approach people coming for the meal with a flyer describing the study and showing how they might benefit from it, along with describing the items they receive for participating, which are a pencil, a pencil sharpener, and a little notebook. I did this for one week prior to the start of the interviews. These PEHFI at SSCC were a smaller sample of the total number of PEHFI in the city of San Marcos.

B. Recruitment to the Nature-Based Mindfulness Activity

I planned to recruit shelter residents and those unsheltered participants utilizing shelter services to join the study and participate in sit spot activities after their workday was over. The sit spot activity is a type of nature-based mindfulness activity in which the participant sits in a greenspace and connect their five senses to nature while observing their external and internal world for 20 minutes, over a span of many days. The goal of sit spot activities is to perceive the tiny changes in nature and self that happen over time. However, only four participants in the

overall study agreed to participate in the sit spot activity; therefore, data is limited in this area. Two of the four sit spots had to be scrapped due to harassment of primary researcher or refusing to follow directions. That left only two valid sit spots which was not enough data to use in this research, according to the research committee. This was in part because shelter residents and unsheltered participants had limited access to the shelter and wanted to use their shelter time meeting basic needs instead of doing a nature-based activity. The shelter schedule was rigid and did not always allow participants time to engage in the sit spot activity. Instead, I was able to conduct preliminary interviews assessing participants' perceptions of nature.

C. Eligibility

Participants were eligible if they were adults aged 18 and older and were English speakers who were experiencing homelessness or food insecurity. They did not have to be a client of South Side Community Center. They were just coming to the afternoon meals. Participants filled out an informed consent form, stating that they agreed to voluntarily participate in the study and that they agreed not to smoke, vape, drink, or do drugs during the interviews or sit spot activities. Each participant was asked to choose a pseudonym to protect their identity in the research collection process and publication of their thoughts, feelings, and behaviors regarding nature. Some chose their own pseudonym and others refused to. In the case of refusal, one was chosen for them. On the consent form, nine participants chose to allow themselves to be recorded while nine others chose to have me write notes only during the interview. I took notes during all 18 interviews. Recordings were uploaded to the Mac computer on September 9, 2022.

D. Limitations

The recruitment plan was altered slightly due to extreme heat. I was not able to attend the shelter as much as possible due to transportation, safety issues and repeated extreme heat waves of 106 degrees Fahrenheit. Additional limitations included sexual harassment I experienced by some participants, making the sit spot impossible to conduct, continuous talking during the sit spot, and unwillingness to engage in the activity. Although interviewees initially agreed to do the sit spot at the end of their preliminary interviews, all but four withdrew their agreement due to the limitations of meeting their basic needs as described above. Extreme temperatures made them not want to be outside and instead go to the inside of the bus station to be cool enough.

E. Sample Demographics

I had a sample size of 18 total participants. All of them were people experiencing homelessness or food insecurity (PEHFI). These PEHFI were attending the dinners at the South Side Community Center (SSCC). Those who resided in the SSCC shelter made up 33%, and 67% were not living in the shelter. There were 17% female and 83% male people in my sample. The age ranged from 19 to 67, with a median of 36.5 and a mode of 38.5. The races included six Hispanic people, six White people, two African American people, one Asian person, one Native American person, and two people that identified with two or more races, as described in the table below. See Table 1: Sample Demographics.

Table 1: Sample Demographics

Race	Age	Gender	Current Living Arrangements
Hispanic 33.33% (6)	Ages 19-29: 33.33% (6)	Male 83% (15)	Outside (Tent, Bridge, Picnic Table, Grass, Woods) 50% (9)
White 33.33% (6)	Ages 30-39 27.78% (5)	Female 17% (3)	Shelter 33% (6)
African American 11.11% (2)	Ages 40 - 49 22.22% (4)		Hotel or Car 16.67% (3)
Asian 5.56% (1)	Ages 50 -67 16.67% (3)		
Native American 5.56% (1)			
White + Native American 5.56% (1)			
Hispanic + Native American 5.56% (1)			

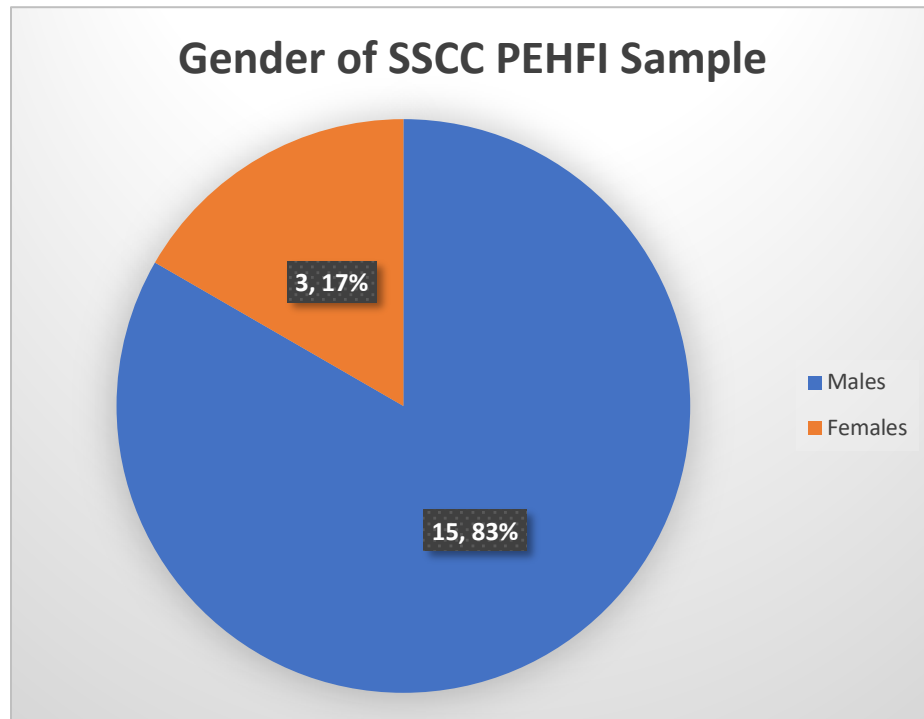


Figure 1: Gender of SSCC PEHFI Sample

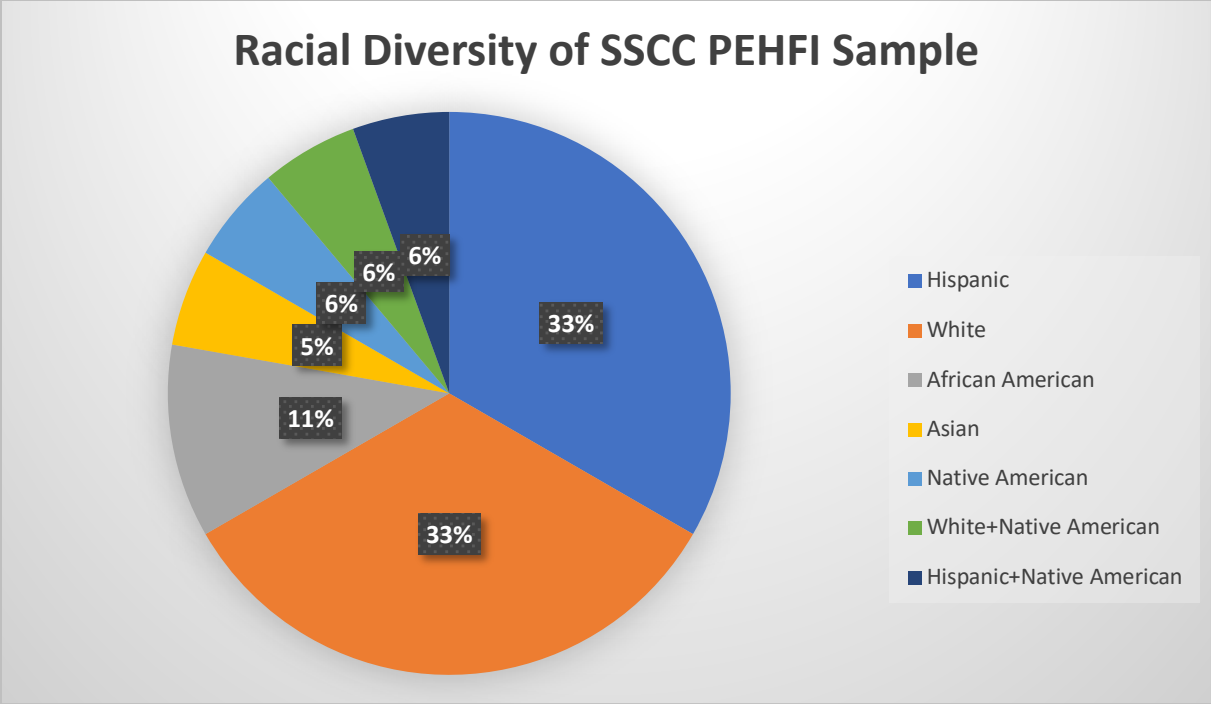


Figure 2: Racial Diversity of SSCC PEHFI Sample

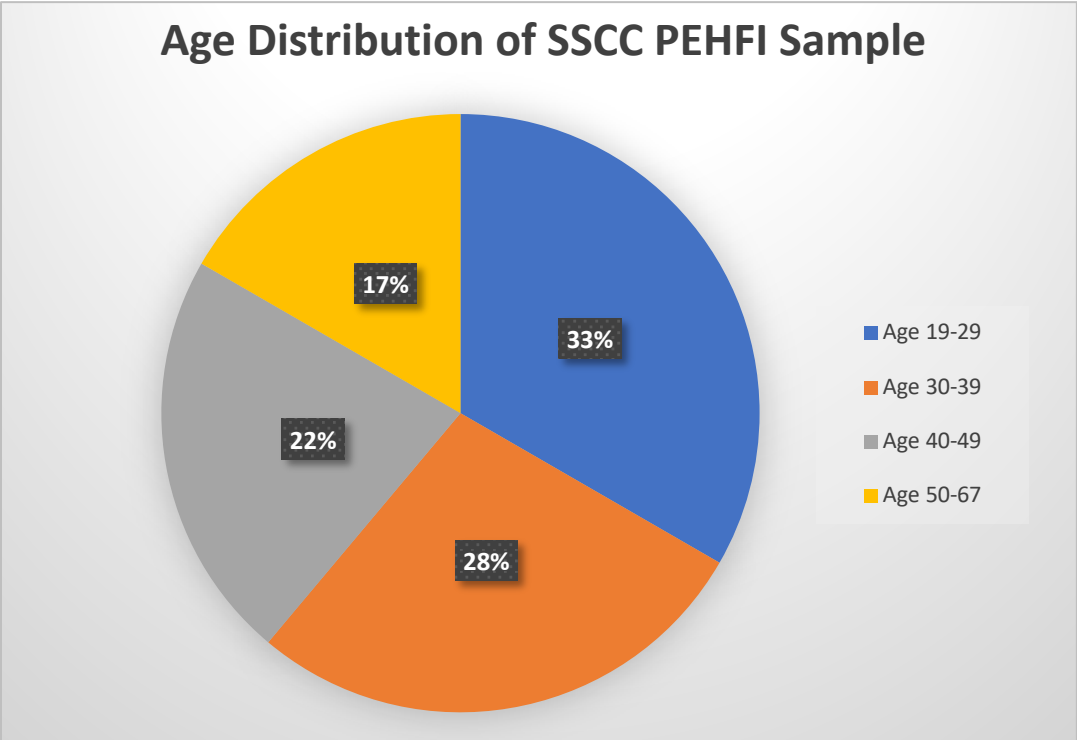


Figure 3: Age Distribution of SSCC PEHFI Sample

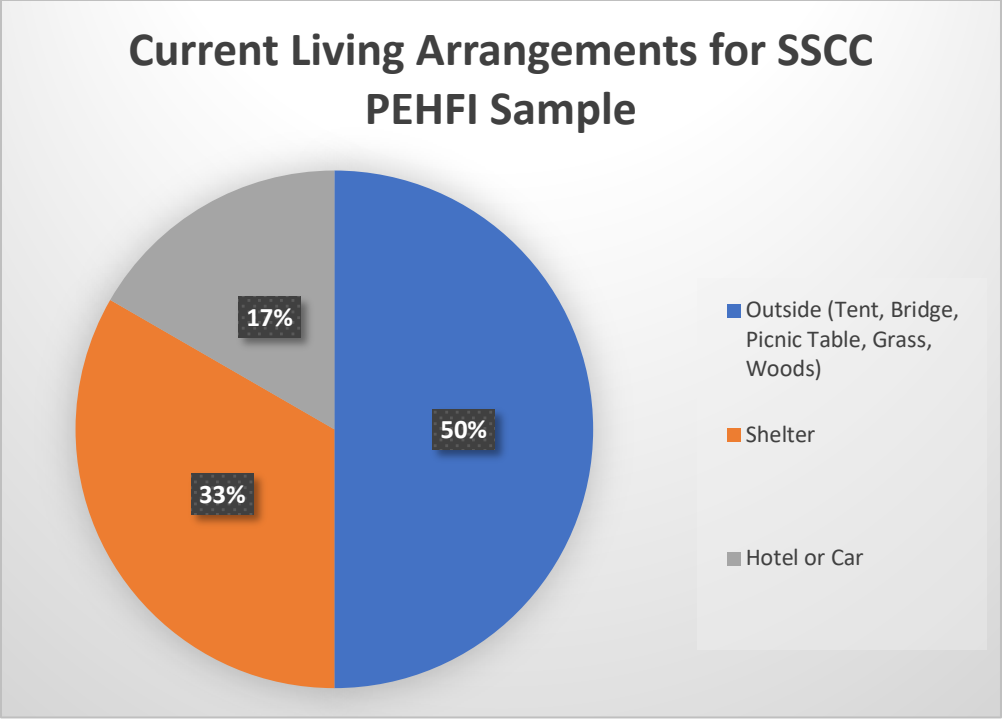


Figure 4: Current Living Arrangements for SSCC PEHFI Sample

Validity, Reliability, and Transferability of the Study

The study gained validity through building trust and rapport with a diverse population of PEHFI that allowed the methods, purpose, and study design to come into alignment. Reliability was built through having a good methodology and adhering to the semi-structured interview guidelines. I always asked the same questions, but added on additional ones for clarification as the conversation went on. Transferability was achieved through being thorough when collecting data during interviews, learning the characteristics of participants, and meeting the study criteria. This is transferable to a specific geographical area where the study was performed with this specific climate and heat extremes.

VI. PROCEDURES

Preliminary Semi-Structured Interview Guide

I followed this guide for each interview.

Interview Script: My name is Carmen Lindsley, and I am a graduate student at Texas State University. Thank you for agreeing to be in my study and signing the consent form. You will be given a pseudonym to protect your privacy. You have/have not given me permission to record our interview. I will be taking some notes either way so I can capture what you have to say. If at any point, you don't want to answer a question, you do not have to. You may also stop the interview at any time without any consequence. If you experience any difficult emotional reactions to this interview, I will contact the South Side staff and provide you with resources for ongoing support. Do you have any questions for me? If not, let's get started. The interview will take about 30 minutes.

1. What name would you like to be called? (Pseudonym)
2. What is your age?
3. How do you identify culturally? (What is your race or ethnicity?) Research shows the way we view the natural world is determined by our culture.
4. Are you currently experiencing homelessness?
5. Where do you currently sleep? (I.E. car, hotel, bridge, apartment, shelter, tent, etc.)
6. Can you tell me about the circumstances that led to you experiencing homelessness?
7. Are you living in the shelter at Southside Community Center?
8. What services do you use at Southside Community Center?
9. What was your relationship with nature before you became homeless or food insecure?

10. How has your relationship changed now that you are homeless or food insecure?
11. How do you feel about nature?
12. If nature is important to you, can you explain why?
13. Are there any environmental issues that you are concerned about?
14. How do you connect with nature?
15. Have you ever done a meditation, grounding, or mindfulness activity before? What did you do and what was it like for you? How did you feel afterwards?
16. Are you willing to experience nature in a way that is healing through a sit spot activity?

Data Collection and Analysis

I collected data from individual interviews on a voice recorder if the participants consented and wrote what they said in my notebook. I encouraged all participants to be audio recorded, to increase accuracy and consistency. I gave them the option to not be recorded, because the nature of this project may be sensitive and triggering to some participants. I audio recorded half of the participants, or nine participants, and took only notes in my notebook for the other nine.

Once the data was collected, I conducted verbatim transcription of audio recordings by hand and coded all data by hand. I uploaded all transcribed interviews to my password-protected Mac hard drive, external hard drive, and the Canvas Texas State system in my thesis class section for my committee to observe.

A grounded theory approach calls for a type of coding that can identify themes that are emerging (Heydarian, 2016). As the researcher is collecting data during grounded theory studies, they also refer to the literature as themes arise in interviews and shared lived experiences of participants. They then use the shared lived experiences plus the ongoing literature review to help them

decide the future data collection and questions posed to participants as themes arise (Heydarian, 2016). Then, in the data analysis portion of the research, thematic analysis is conducted on responses to interview questions, dialogues held during the activities, notes they took and wanted to share with the researcher, and any feedback they had. From these themes, I formed codes (Heydarian, 2016). The codes created a construct with certain definitions and characteristics for each code. Codes can be formed from existing literature, but since there is no literature on PEHFI with regards to their perceptions on nature, we created our own codes based on the data we collected. Codes were created based on the interview protocol. An example of a code is "familismo" in Latina culture, which means prioritizing and taking care of the family. A sub-theme within that code is taking care of children (Heydarian, 2016). I developed sub-themes within the codes and themes I identified (Heydarian, 2016).

I looked through all the responses, once transcribed from audio to text, created a code for each theme and subtheme, and created a code book in Excel to organize all my codes (Heydarian, 2016). I then assigned codes for each theme and subtheme I identified. I analyzed the data with a team of people who know how to do coding assignments, who were those on my graduate committee. We then organized the themes into two major categories, that were positive perceptions of nature and negative perceptions of nature. These two main categories were broken down into the following themes and subthemes.

Category 1: Positive Perceptions of Nature

Theme 1: Nature Connection

Subthemes:

- a. Nature connections formed prior to homelessness
- b. Religious, spiritual, and philosophical connections to nature
- c. Direct interactions with plants and animals, developing a sense of place, & feeling love and appreciating the beauty in nature
- d. Positive connections to nature through non-living parts of nature
- e. Using nature to help them connect with family or friends

Theme 2: Nature as Health

Subthemes:

- a. Using nature to heal childhood or adult trauma
- b. Using nature as a means to care for mental and physical health

Theme 3: Nature as a Resource

Subthemes:

- a. Using nature as a resource to meet basic human survival needs
- b. Using nearby nature as a resource for human survival and emotional support

Category 2: Negative Perceptions of Nature

Theme 1: Nature Disconnection

Subthemes:

- a. Preferring indoor built environments or specific climates and terrains
- b. Sources of discomfort in nature: the elements and the insects
- c. Wild animals that make them feel scared or angry
- d. Disconnection to nature or other humans now that they have been homeless

Theme 2: Environmental Threats and Degradation

Subthemes:

- a. Global warming
- b. Encroachment of the human built environment on nature
- c. Perceiving themselves as an environmental threat and taking actions to care for the environment and animals
- d. Different types of pollution found in nature and what they are doing to resolve it
- e. Noticing human-caused extinction of endangered animals but felt it was beyond them to fix, so they relied on a higher power

We conducted deductive, theory driven coding, by applying the Biophilia Hypothesis to positive responses and we applied biophobia to negative responses. Biophilia is the innate tendencies of humans to focus on life and lifelike processes (Gullone, 2000) and can include photos of living things (Passmore and Holder, 2017). Biophobia includes the fear of life and lifelike things.

Inductive themes driven by data need to be developed independently by the researcher, making sure to address bias by sharing the data with other social scientists (Heydarian, 2016).

The researcher can introduce their own bias into the subjective coding of themes, especially during inductive analysis of data (Heydarian, 2016). However, this can be avoided by the researcher working separately and coming together later to discuss themes, codes, and subthemes with other reviewers. In this case, it was the thesis committee who offered feedback on themes to ensure they are unbiased.

This grounded theory on the perceptions of PEHFI about nature has been constructed here using primarily the Biophilia Hypothesis as well as the other theoretical frameworks, including the

Social-Ecological model, Ecological Systems Theory, and Risk and Protective Factors Theory. Each theme and subtheme were assessed for their relationship to these three theoretical frameworks, in addition to the overarching Biophilia Hypothesis that mainly helped to organize the themes. The relationships are explored more in the discussion. The Risk and Protective Factors Theory says that there are events or characteristics that lower the impacts of risks or increase the likelihood of a positive outcome, and that factor would be protective. A risk factor would make the outcome more negative. We find these within the positive and negative connections with nature as well. The two social models of Social-Ecological model and Ecological Systems Theory also play a role in predicting and supporting how the PEHFI act in regard to themselves, nature, their community and the government, as shown by the themes and subthemes that emerged in their discussions with me during the interview.

I was not able to compare pre-and-post intervention themes, to see if there is any difference or measure the level of participation to see if the amount of sit spots which they attended affected their perspectives on nature, due to the study limitations described above. However, I was able to collect and analyze meaningful data on both the positive and negative perceptions of nature among people experiencing homelessness.

VII. RISKS AND BENEFITS OF THIS STUDY

Per the guidelines of the Institutional Review Board, it is important to also speak to the risks and benefits of this study, and how they were managed within ethical guidelines and the policies of the collaborating agency. Participants could have experienced distress or mental health symptoms during sit spots or during interviews. If this would have occurred, I would have stopped the interview and referred them to a South Side Community Center staff person.

Sometimes fights broke out among the men who I was not interviewing, which meant that I had to pause the interview due to how loud it was and ask for a staff member to end the fighting.

These were few and far between and were far away from me and my respondents. It was just in the same general vicinity of the picnic table area where people sat outside to eat in the nearby nature of the shelter yard. Sometimes people cried when recounting a sad story during their interview, but I held space for them and helped them through it until they felt cheerful again.

I also gave the participants the resource list created by South Side Community Center and pointed out what free mental health care resources the City of San Marcos has. One such resource is the Scheib Mental Health Clinic, 1200 N. Bishop St. #200, San Marcos TX 78666. If a mental health issue occurred, I would first offer good listening and empathy by letting them speak about their emotions, followed by positive affirmations and giving them the resource list. Sometimes I gave them the resource list at the beginning of the interview, to save time.

If this would have not worked, I would have followed the South Side Community Center protocol. This protocol was as follows: 1. Ask the person to leave. 2. If they refuse to leave, say that you will have to call the police. 3. If they still refuse to leave, call the police. Participants were informed of this protocol in the informed consent forms.

Participating in this Texas State University research study may have involved increased risk of exposure to easily transmitted infectious diseases, such as COVID-19, due to in-person interactions with the research team. The researchers followed local regulations and institutional policies, including use of personal protective equipment (PPE), environment hygiene, and social distancing guidelines, according to government regulations and policies in effect.

One of the benefits of this study was time spent in nature, which may have provided study participants with a sense of calm. Likewise, the information uncovered may provide professionals working with this population with information and knowledge about how perceptions and experiences people have in nature prior to and during homelessness affect their nature connectivity and conservation efforts. Results will eventually be published in a peer-reviewed journal, and research may be presented at conferences for environmental sociology, social work, and psychology, as well as presented at sustainability conferences regarding social responsibility and the human dimensions of environmental conservation. Dissemination of the findings is important to advance our limited knowledge in the field, which will help us heal both nature crises and the homelessness crises simultaneously, both of which are affected by rampant, unchecked capitalism without any sustainability. We need to care for the triple Es of sustainability: ecology, economy, and equity of society.

VIII: RESULTS

This section of my thesis details the findings of my qualitative interview with participants. The data from these interviews was thematically coded into two main categories: positive and negative perceptions of nature. Participant quotes are presented that support the development of these themes.

Category 1: Positive Perceptions of Nature

Theme 1: Nature Connection

Subtheme A: Nature connections formed prior to homelessness

Many of the participants currently experiencing homelessness said they had a positive relationship with nature. A lot of them reflected on their relationship with nature prior to homelessness, and mentioned leisure time, gardening, outdoor activities, travel, and interaction with animals in which they used to engage. Participants shared the following quotes. All names have been changed to protect their privacy.

Kevin, a 48-year-old White man who lives in the shelter said he participated in "leisure camping on the beach, with friends, Boy Scouts and campfires" before he was homeless.

Jonah, a 29-year-old White man who lives outside said, "I loved nature before I was homeless. Hiking, camping, hunting, fishing. Travel. [I've been] from West Texas to East Texas and Oklahoma. I want to travel to a lot of places. I had a car, but I gave it up. I am trying to get to the mom and my kids. I took off, because it was too long of a wait at the bus station."

Marie, a 42-year-old White and Native American woman who lives in the shelter with her husband, talked about raising both wild and domestic animals. She said, "I raised 10 opossums (5 boys and 5 girls), because a dog ate the momma. I raised 2 raccoons, a goose, a rabbit, and squirrels. I set them free." She went on to talk about her uncle who was a tree harvester. She said, "When he chopped down trees, he brought home baby squirrels, deer and any baby he found" and then went on to talk about caring for them. She used to go fishing and hunting. As a kid she said her "dad puts the giant grasshopper on the hook for me, because I don't want to touch it, because it goes "pop" with its back legs. Tries to kick! Scary! Used to catch the little ones as a kid."

Limbani, a 38-year-old African American man who lives outside, said he loved growing plants. He also reflected on “hearing birds singing and squirrels chirping” when taking out the trash. His awareness of these simple things helped him feel connected.

William, a 35-year-old White man who lives outside said, “Me and my brother went fishing and mudding. There was not a lot of nature where I was from. It's 50 feet below sea level. There are no ridges and hills, just bugs and swamps. We did swamp shit, pretty much. We'd go and catch fish for however long before we got bit up by mosquitoes and had to leave. We'd go just before dusk at 5 PM until it was dark, and we got bitten by mosquitoes, when they come out.”

Henry, a 43-year-old Hispanic, Native Mexican American man who lives entirely outside in a tent or under a bridge said, “You get caught up in working in daylight and you'd rarely actually spend time outside. I love being outside, but when you're struggling paying bills all the goddamn time, all you doing is working. Going to the car to the job, job to the car, bitching about how hard it is. How many things can we add that are white noise or nature sounds trying to put people to sleep? It's part of us. We belong out here. Our disconnect from nature has actually hurt us as a civilization.”

Charlie, a 54-year-old White man who sleeps outside or in his car said, “I was raised as a farmer. As a farmer. Hunting fishing, enjoying the outdoors. So, for me, it's real natural, it seriously is. My sisters used to braid my hair and the hair of our horses. See, I grew up in the country, and we just found things to do, you know? Go fishing and climb trees, play football, baseball, you know basketball, whatever.”

Firuláis, a 67-year-old Hispanic man who sleeps in the shelter said, “I always liked nature. When I was a child, I used to be a Boy Scout. So, we went out and we went to nature, and Mexico is different than the United States. Less - less structured in Mexico is less structure and here is very much more structure. So yes, I always liked nature. Not only with the Scouts, but also with my close friends when I was in middle school or high school. We used to go out maybe camping or whatever. And then in my adult life, I have had many times when I have gone camping by myself, or with my sister or my nephew.”

Eunice, a 23-year-old Hispanic, Mexican American woman, who sleeps outside or in hotels said, “I feel towards nature kind of happy and sometimes kind of neutral, because sometimes nature can be a little weird. But for the most part, it's meant to be good, so I get happy, most of the time.”

Hank, a 49-year-old White man who lives outside said, “I love the beauty of nature. I enjoy riding my motorcycle. I enjoy the wind on my face. Uh, the view. Love the sunsets, riding into the sunsets. Listening to Bob Marley on my motorcycle. [Growing up, I loved] animals always at aquariums with exotic fish. ... I always loved the dogs. Always had dogs. I'm a certified scuba diver. Open water. Yeah, I used to love going there and looking at all the different fish. All the Australian fish were really cool. The Rope Fish, I liked. Yes. They look like snakes, but they're fish. And ... the Angelfish, of course.”

Treyienne, is a 31-year-old White man who lives outside and is fully absorbed in remaining this way, so he can practice his nomadic Maji religion. He grew up hunting and fishing with his dad, and working on construction projects outside, and helping his dad take care of the deer leases ever since he was 7 years old. He said, "It's a place you lease out to hunt on for a year or two years." He reflected on how his relationship with nature has changed now that he is homeless. He said, "I like nature a lot more than whenever I was younger, because I would be going from a house to going outside."

Oliver, a 59-year-old Native American Cherokee man who lives in the shelter, said he used to raise ponies in the pasture outside in Virginia and that he is in favor of hunting for food but not for sport. He has hunted for food on the Reservation in North Carolina where he grew up with his grandma and in Virginia as an adult landowner. On the Reservation, he used to grow corn, bell peppers, potatoes, and cucumbers, and keep chickens for eggs. He prefers to shoot deer with a rifle rather than bowhunting, because he wants to reduce cruelty to animals by killing them quickly. He said, "I have bow hunted, but most of the time I hunted, I use a rifle, because it's for sure, you know. Then you can kill them right away without having to make it suffer."

Subtheme B: Religious, spiritual, and philosophical connections to nature

Many participants felt a religious, spiritual, or philosophical connection between themselves and nature. This brought them existential comfort or explanation for natural phenomena. They wanted to explain and explore the reasons why things existed in the world as they did, and how they exist within that. Although they seem to feel strong existential connections to God or a greater power, and nature, we see that their connections to other humans are somewhat weaker.

Kevin, a 48-year-old White man who lives in the shelter said, "I see God's marvelous design, how He provides for all life. Way different, Glory to God in the highest. How nature doesn't worry, and everything is provided. How nature interacts. Eucharistic. Things have to die and be reborn to help sustain life, just like Christ. It's God's other Bible in a different sense. Another witness to God and His grace and His Creation. The current fallen status after the Garden of Eden. Awe is the feeling. Respect. Mixture of emotions. Sadness, joy, amazement, depending on what you are observing. Yes, it's important, because it demonstrates God's grace and His design. His fingerprints. His glory."

Limbani, a 38-year-old African American man who lives outside, said, "Whatever come. I'm supposed to be God, He say, "It's gonna rain pretty soon." The Devil might do this to this person and do that to that person." He seems to believe God is in control of the weather and that the Devil might play a role as well in a sort of divine reward and

punishment system.

Jonah, a 29-year-old White man who lives outside said, "I feel happy with nature. It's nice. I do not disagree with God. He made everything perfect. Plants, flowers, trees, people, rivers, lakes, ocean, sea beasts. Everything He made is perfect.

William, a 35-year-old White man said, "Nature is super important, because nature is the only reason why anything exists. It's also the most pure thing on the planet.

Henry, a 43-year-old Hispanic Native Mexican American man who lives outside said, "Nature humbles you in so many ways. Because you think you're something, then all of a sudden, nature just comes and wipes everything away every time. Man, we do such things and then ... one little hail cloud could wipe out a whole colony of us, you know, sometimes the whole civilization to the planet...I mean, c'mon? How many times has nature handed it to us?" Nature got your back. Mother Earth got your back. You heard people call nature "Gaia?" Gaia - G.A.I.A. That's usually what they call Mother Earth. Gaia. You should look that up; you'd really enjoy it. (I asked, "What did you do and how did you feel after you thought God's got your back?") He replied, "Relieved. Very free, very uninhibited. Like, I'm not burdened, because I know that I don't have to worry about the big picture, because it's gonna take care of itself. All I really gotta do is just show up." He went on to say: You are as much nature as I am, as plants are, you know? You are. We all are. We are all like leaves on the tree, you know."

Charlie, a 54-year-old White man who sleeps outside or in his car said, "I mean, I can just roll out a sleeping bag [in nature], pop a pillow down, pray to the Lord God almighty, and have a pretty happy sleep. (laughs) Serious. Now, the Lord's been *exceptionally* good to me. I think I've racked up too many debts on His bill. Or my bill. Pillows help, rather than stones. You're not like 7 foot so that's ok. No nature, no life. You can call it Mother Nature, Mother Earth. You know, the Lord God Almighty, there is a whole slew of words that you could use. The Holy Spirit for me especially. To be in tune with the Holy Spirit. That's what Jesus was, he was totally in tune...with nature."

Firuláis, a 67-year-old Hispanic man who sleeps in the shelter said, "The other thing, is not only I like nature, but I am aware that we human beings...I have a religious point of view. So according to the religious point of view, I think we have our responsibility before God, to take care of this nature that He gave us. So, it's not like, "I am the king, and I am on top of the nature, and I can do whatever I want," it's "I am an administrator, I am there to take care." Of course, we can use it for our good, but at the same time, we have to take care of it, in general, of nature...If I am in nature, I am thankful to God that He gave us *so* much beauty, to enjoy." He went on to say that nature fits into a grand design that includes guardian angels, humans, and God and that each thing is holistically integrated with each other thing. He described a hierarchy with God at the top, followed by angels, then humans and nature. He said humans are a part of nature as well as their own society. He lists nature in three categories: nature nature, human nature, and divine nature. He has an active prayer life and believes strongly in the power of his guardian angels to protect him from harm, based on his traumatic experiences and experiences

with prayer. He went on to explain how we as humans have the consciousness to know ourselves, the grand design, and nature. "That's the interesting thing that we have the ability to reflect in ourselves. To be aware that, that we are able to know our environment. And know ourselves. And know the other levels of nature that we have."

Treyienne, a 31-year-old White man practicing the Maji religion, along with the Aleph Lamedh religion, who lives outside, discussed symmetry such as the Fibonacci sequence, the golden ratio, and the Earth's magnetic frequency in nature. He relates this idea of symmetry in nature to the concepts of human free will and destiny. He said, "Like if a jungle is not chaotic, then there's basically nothing that's chaotic. You study that. If you look close enough, there's always a rhythm, there's always a pattern, there's always a reason things are moving, going in the direction that they are. We all have destiny, and we all have events in our life that are meant to happen and um, um then there's free will that like you can do whatever you want to in life but there are still things that are destined to happen to you in your life's path, in your purpose."

Subtheme C: Direct interactions with plants and animals, developing a sense of place, feeling love, and appreciating the beauty in nature through art or other means

Many people felt nature connection because of their interactions with plants, animals, and water in nature, which included observations of their beauty, making artistic representations of nature, trying to bring living beings closer, and feeling love for them and nature. That included observing wild animals or stray domesticated animals or caring for the wildlife or the stray animals. Participants also discussed a sense of place even though they were experiencing homelessness. Participants described artistic works they made related to nature, like nature videos, photos, or drawings, or artworks they made from objects they found in nature, like rock cairns.

Firuláis, a 67-year-old Hispanic man who sleeps in the shelter commented on the beauty of nature, also reflected in humans. He said, "In that video [I made of nature stored on my phone that] I show you; I was feeling *really* very well. Like: "This is like paradise! This is *so* beautiful! Sometimes I go camping. Sometimes, I enjoy. I really am thankful, when I see so beautiful trees and beautiful animals when I was driving around there, around uh Canyon Lake and I saw some deer, for me, that's *really* beautiful. Yes, or listen to the birds like we are listening right now. And again, as I was telling you, there is not only nature of the birds and the trees but also the human nature. Sometimes I enjoy when someone is kind."

Dakarai, a 38-year-old African American man who lives outside said, "Trees are cool. [I'm] becoming more one with nature. [I] walk around barefoot now when I wouldn't before. Trees can provide trees and covering. [I] can sometimes get away. It's a jungle out there. I use trees to survive. Unpacking my backpack and packing it up again. It's a metaphor, because we are unpacking the issues of nature. [To connect to nature, I] find a nice quiet place, breathe in the fresh air. Hug a tree, climb a tree. Nature watch. I need to climb trees more often. Go get in the water. Lie down in the grass." He went on to talk about his connections to animals. "I love animals, nature walks. I love deers when I see them and birds."

Treyienne, a 31-year-old White man practicing the Magi religion, who lives outside said, "I used to hug trees and put my heart next to the tree, like up onto the tree. And then hug the tree and then wait. I would let my heart beat against the tree, and like let it do that for a while and try to feel the tree's heartbeat. That's what I would do. I had some magical experiences with it for sure."

William, a 35-year-old White man who lives outside, said "Trees let me relax and be safe, and birds. Trees are a great source of grounding energy, so I get my energy from climbing trees, exercising on trees. Concrete drains energy. People drain energy. Trees give energy. Concrete conducts heat. Trees cool down. Roads are always being worked on. Development never stops.

Marie, a 42-year-old White and Native American woman who lives in the shelter said, "Nature is important. Trees give oxygen." She also went on to talk about animals she encountered: "If any animal needed help, I'd help it. There was a baby cat here outside the shelter with a broken leg and it was blind. I called animal control to come and rescue it. I got a towel and wrapped it up to keep it warm. He couldn't walk; he was hurting." She shared happy memories from her past experiences with wildlife rehabilitation before she was homeless. She said, "I like bathing them, feeding them oat milk, let them hang on my finger, let them jump around the house. I am talking about the 10 opossum babies I raised and the 2 raccoons. A fat one and a skinny one. The skinny one jumped on the fat one when she was sleeping!" She laughed. "I gave them names when they were with me, but when I released them into the wild, they no longer had names."

Hayato, a 19-year-old newly homeless Asian man who lived in the shelter at the time of the interview but had been outside previously just for a few weeks stated, "I see that there are a lot more deer than I thought there were in San Marcos. I have had 12 deer sightings [while living outside for a few weeks]. Sitting in the shade, I saw cats and tried to make them come near me. The cat came out at nighttime, there is a mom cat and kittens right here living outside the shelter." He likes to count the animal sightings like a naturalist such as David Attenborough.

Hank, a 49-year-old White man who lives outside talked about interacting with animals while living outside said, "Yeah, I sleep outside and the deer come up to my picnic table while I'm sleeping. I go swimming in the river. The fish bite at my heels. Watching turtles hang out. Snakes swim across the water. I'm learning what types of snakes are

poisonous or not. And the *birds*, and uh just listening to the birds. I love nature. And I want to even more experiences with nature. I go swimming. I lay out in the sun, feel the breeze, listen to the animals and that's pretty much it." He also is enjoying the benefits of walking barefoot in the water and on the land. He said, "I tread gently through the river, as not to cut my feet on sharp objects or stub your toe on a rock or something underwater. I like going barefooted. I will go through the rough spots just to get to the point to where I am comfortable. Not worried about it. You know. I'll take a few cuts to learn how to maneuver, 'cause I like the way it feels with no shoes. And I was told the other day that uh another way your body absorbs minerals besides eating them is through your feet. Barefooted is a good thing. Healing minerals. Everything absorbs it. When I go out there to go to bed, I take my shoes off right away and go walk around barefooted." He likes to develop his skills of awareness using the sounds of plants. He says, "A skill. Heighten your levelness, awareness of what's going on in nature around you. I used to like laying out in the woods and listening for any twig to snap. And the faintest snap, like you hear this, like you're sleeping. And you hear it and you look that direction."

Henry, a 43-year-old Hispanic Native Mexican American man who lives outside identified the difficulties and rhythms in nature that one must be aligned with to survive and enjoy. He said, "I appreciate it (nature) so much more! Respect it. It can change your *whole* world. From one way to the next. ...When it's really hot and it cools down, [do] Something go sit by the river and put your feet in, just relax. Try and line your energy up with the Earth's." He also enjoys the rhythms of nature. He said, "Like even right now, the bugs, making that noise, makes a rhythm. It's putting me to sleep." He very much enjoys carrying around rocks and making art with them. He said, "I love those rocks. Let me get you one. I have about 20 rocks in my backpack right now. Some of them have fossils. Got 'em down by the river. I don't get to go as nearly as often as I like but each ...God, can you stand during the waves? I got anywhere from 10-20 rocks at any given moment, in my pockets or in my backpack, or something somewhere." He showed me his rocks from his backpack. He showed me photos on his phone of rock cairns he built in nature. He said, "This one looks like hearts. I dunno why, but they will be. Maybe shells. It's a baby seashell!"

Bert, a 29-year-old Cherokee and Hispanic man who lives outside, claimed that nature speaks to him more when he is far away from civilization rather than in nearby nature. He feels more connected to himself far away from civilization. He said, "So like here [nearby nature at the homeless shelter], nature's not gonna say much. But out in the woods, nature will definitely tell you, again, if you're listening, where it's safe to be around and where to avoid certain animals, I guess. There's some nature here, but it's not 100% full blown, nobody else within a 20-mile-radius type of thing. Sometimes, being around nature, I feel more human, rather than being around a bunch of humans."

Pedro, a 29-year-old Hispanic man who lives in the shelter, said that his love for ducks gives him a sense of place, "Javelinas and armadillos are cool. I want to pet a stray dog or cat. Cats in Midland, TX, have been really nice to me. I love ducks in Spain. I love them so much! I have seen a duck here and it was exciting! I haven't seen any ducks since I left Spain until I came to Texas. I was homesick all this time for the Spanish ducks. I like

ducks with green heads in America." He also has opinions about which climates and terrains in nature are better than others, and which ones give him a sense of being place-based. "I like it when it is semi-arid or the water or a Mediterranean climate. I like New Mexico, the dirt, and the agave plants. I like the climate, flora, and fauna of semi-arid deserts. Like Northern New Mexico and Arizona. Low mountains and no humidity. I really liked the Appalachian Mountains, but I wasn't experiencing them. So much of the country is so beautiful, like Colorado and Utah. I've been to Colorado and Utah."

Charlie, a 54-year-old White man who sleeps outside or in his car, said, "Love nature. Love animals. And usually, I am okay with people. How do I connect to nature? Live in it. Be part of it. Maybe I'll grab a branch or something. I'm being silly."

Oliver, a 59-year-old Native American Cherokee man who lives in the shelter, said he likes to observe and catch aquatic wildlife for fun. He said, "I seen they got some *big* soft-shell turtles down in this river down there. Man, I was down there at the river and there was like 100 people and this big turtle came up, man! Like *right* in the middle of everybody...And he was just sitting on the water... I mean it was huge! I almost jumped in to get him, you know, just to catch him. And uh I said "Naw, I'm gonna leave him alone." I wasn't gonna kill it. I was just gonna catch it. I went to uh San Antonio one time to the Guadalupe River. And I and I caught a soft-shell turtle. I went underwater and caught him and came back up with him. ...I seen some big frogs. Bullfrog." He went on to tell me about his explorations in the hills of Virginia and told me he prefers the climate and the spring water over there as compared with Texas. The water itself gives him a sense of place. "Yes, in Virginia, nature's awesome and it's not as hot. And in the hills, there is plenty of shade. ...You can find abandoned coal mines or something. You can go back in the cave and it's nice and cool. Find some spring water that is ice cold, even in the summertime. Cause most spring water is coming from underground. I had a little place I used to go to right up from my house. And it didn't matter how hot it was, the water was almost always ice cold. And it's so good man... that is probably the thing I miss the most, from the hills, is that spring water." He went on to explain how he misses other things in nature found in Virginia, like the type of terrain and wildlife. He says, "Well, I miss the hills too, you know. I like the peace and quiet, and I love the animals. We got a lot of black bear. You know, we got mountain lion. Elk, deer. Little bit of everything. We don't have no grizzlies though, not like up in Montana, South Dakota, Wyoming. No. I love nature, in Virginia. Out here, No. Not so much. Because it's totally different. I mean, yeah, you got hills in Texas too, but it's nothing like Virginia. Texas is kinda depressing. I mean, as far as nature. ...Where Virginia is more, it's awesome. The hills really are. I love it. I used to go up on the tops of them mountains and just hang out, because it's so nice. I mean I love nature; it just depends on where I am at."

Jonah, a 29-year-old White man who lives outside, said, "I love nature under the trees. We get oxygen from critters in the sea."

Limbani, a 38-year-old African American man who lives outside, said, "Nature can run its course. Only *you* can decide what nature can do for *you*... I draw and I sit and fun in being in Mother Nature."

Subtheme D: Positive connections to nature through non-living parts of nature

Some participants had positive connections to nature through non-living parts of nature they used to comfort themselves, experience curiosity, or using their senses to enjoy it.

Hayato, a 19-year-old Asian man who lived in the shelter at the time of the interview said, "The wind in the trees is comforting."

Franco, a 29-year-old Hispanic man who lives in his car or hotels said, "I enjoy being outside, being out there with everything. Being outside with everything. Being outside looking at stars, listening to wind in the trees." [This was how this person's nature connection had grown from a negative to a positive after being homeless.]

Henry, a 43-year-old Hispanic Native Mexican American man who lives outside talked at length about how his connection to nature helps him self-regulate: "[Nature] is very important to me, because it tells me where to put my foot. Yeah. I don't know what. Like I *really* don't know what to do like if I am really really just discombobulated, and like at a loss, I literally will go outside, sit down, and play with the rocks. And that that that that connection, re-vamping myself, re-grounding myself, that's how, have you ever heard of grounding? Grounding myself, it balances me, and I can actually think about things on more of like hard. You know all society, not nature, the whole work and bills and all that stuff, that has a way of pulling you away from what's everything that's real. In the real world. What is real? The dirt is real. Air is real. Water is real. We are real. But we are so disconnected from all that, so it's like when you escape out, and sit your ass in the dirt, it makes you a better person. It makes us all better people. Go outside, sit down, and put my hands on the rocks. I love those rocks."

Treyienne, a 31-year-old White man who lives outside and is in the Magi religion, believes he makes magic by connecting to the stars. "I look at the stars, I uh, I stargaze. There's another word I am looking for. One of the meanings of a Magi is a concentrator and a follower of the stars. [I concentrate on] its glory and its light and its aura and its magic. I just learned a star magic yesterday, that I can harmonize and connect to a star and receive its gifts and its magic and its power. And it's healing, it has healing stuff too. And creation. There's a lot of different things that I create. I create Spirit, is one thing I create." His belief system includes reincarnation and the idea that he once lived near a star before he incarnated on Earth. These beliefs about stars informs his self-concept of who he is. He says, "I lived in the Heaven around Sirius and then Sirius is considered a Heaven in the universe. It's like a very holy and heavenly sacred and divine place."

Subtheme E: Using nature to help them connect with family or friends

Some participants used nature to help them connect with other family members or friends. At times this connection was made primarily in their own minds and did not include living people. It helped them remember the ones they lost or were separated from that they once had a bond with, in real life. Most participants had a stronger existential connection to nature, self, and their higher power, and a weaker connection to family and friends, as described below.

Franco, a 29-year-old Hispanic man who lives in his car or hotels became emotional as he talked about how nature has helped him feel more connected to himself and others. He said, "I don't have feelings towards anything. When looking at the stars, I do. Before I went to prison, I told my kids to look up at the stars, and I told them at the same time, I'd be looking at them. At nighttime, I look at the stars and the moon, and I talk to them like I am talking to my kids. When I was in prison, I wrote my kids letters, or gave them drawings every day or every other day so they could get something from me every day. They were never sent. I can't see my kids now that I am homeless. Their grandmom don't let me see them. Every night, I still talk to them every night by talking to the moon and stars."

Charlie, a 54-year-old White man who sleeps outside or in his car reminisced about how nature helped him connect with others when he was younger: "When I was a kid, I used to do that. I'd collect some rocks and give 'em to people. Especially if they were rocks you could skip across the water. But I'd give it to people. Share. I believe in sharing. It's healthy for the soul."

Eunice, a 23-year-old Hispanic Mexican American woman, who sleeps outside or in hotels said, "I'll go outside, and I'll spend some time alone with it [nature], or with a friend. And I think mostly it's just making a lot of observations. Like, we'll kind of verbalize to each other the observations we make. Anytime I would need to spend some time by myself or see friends, I would pick parks or hiking trails to go to. I notice it's for lots of introspective things 'cause even when me and my friends go, we're usually talking about stuff in their life that's going on."

Oliver, a 59-year-old Native American Cherokee man who lives in the shelter, described the connection that he has with his grandfather and his father when he explores the hills. "I really like it. Exploring the hills because you can find different things, you know. You know, my grandfather, he liked to hunt a lot, but one time he was hunting, and he found his, I guess it was like a, I don't know if it was a little mine shaft or just a little cave, but there was, he found a bucket of gold coins and he took two of the gold coins. He was up in these hills. And he, I guess he was so excited he leapt down off the hill to go get some help and to show people these coins, and he couldn't find his way back, he never could

find the place again. Yeah, my father kept them until he died, and I don't know what happened to them after that. They were like old \$20 gold pieces."

Theme 2: Nature as Health

Subtheme A. Using nature to heal childhood or adult trauma

Some participants discussed how they missed out on spending time in nature to improve their mental and physical wellbeing during their traumatic childhoods or during adult trauma. They've decided to now immerse themselves in nature to heal themselves.

Jonah, a 29-year-old White man who lives outside said, "[Nature is] important for our living. Enjoyment, peace, and harmony, you get when you are homeless...Parents can't give ADD kids peace and harmony from nature, because they are always working. They can't take kids on bike trips, can't take them to the lake. If there's 1 parent, not 2, there's traumatized kids. \$7.25/hour. Always working. Parents going through marriage problems can't care for their kids. They give parents half off on ADD medicine for kids, but they can't get food stamps. My own family. My brother's ADD, my bipolar and schizophrenic brother. Mom was fighting with my stepdad, my brother's dad, who was a crackhead. It pulled her away from raising 4 boys because of my stepdad's crack addiction. She could work and it's all she did, because no one else would."

Henry, a 43-year-old Hispanic Native Mexican American man who lives outside, said, "Before you know it, the quicksand is up to your chest. It's not the homelessness that is so bad, it is the hopelessness, that feeling of desperate that is the killer. When your mind gets trapped too, then. Positive energy is a BIG deal. But being homeless, every time, every day, you watch the sun rise and set. It's very peaceful. There is some sense of calmness to um the disarray."

Hank, a 49-year-old White man who lives outside, told horrific stories of trauma and death he experienced and how the ambulance had to come. He then went on to talk about how he finds respite in nature: "[Nature] is important to me, because it's where I get my healing. I relieve stress. Connecting with nature helps me forget... about issues and problems that may be going along trying to kill you. They help you escape yourself. It's good therapy. Everything's better in the woods. A carefree feeling. Living in the moment."

Subtheme B. Using nature as a means to care for mental and physical health

Many participants view nature and natural resources as a means of caring for their mental and physical health. Some people were already using nature as a place to meditate, read and reflect

on religious scriptures, or practice nature-based mindfulness to improve their mental health.

Kevin, a 48-year-old White man who lives in the shelter, said, "I swim in the river that's spring fed, underwater, walking in the evening, finding a good spot in the open with trees around to meditate. Mainly the water. Because you're in full immersion and unplugged from electronics. The beach is a huge one for me. Important. Hugely important. [I do] reading, studying the Bible, journaling. I do focus 3-3-3 rule, which is Name 3 things you see, 3 things you hear, move 3 body parts. I do prayer and take notes on the Bible. It is painfully purifying. The Word is alive and powerful, and it pierces your soul and you come out stronger like a work of art. Afterwards I felt serene, resolved, carefree, relief, and joy."

Dakarai, a 38-year-old African American man who lives outside, said, "Sometimes I look inside myself to find how I can connect with nature. Talk to people, hug people, and handshakes, because we are a part of nature. I learned tai chi. I meditate all the time. In a health facility, I learned tai chi. Tai Freaking Chi. Clear your mind. Focus."

William, a 35-year-old White man who lives outside, said, "[I use nature to] meditate. I did Cognitive Behavioral Therapy in Oregon, but it was a brainwashing cult. I still use mindfulness, breathing and meditation. It was great, because I learned how to center my thoughts. Paying attention to my own thoughts allowed me to concentrate. It felt good."

Henry, a 43-year-old Hispanic Native Mexican American man who lives outside, said, "Grounded by nature. Toes in the sand. There's actually bacteria and microbes in the soil that we take in right through our skin that actually help prevent mental illnesses, and it has been connected with a lot of them like Alzheimer's and Asperger's and Dementia. Things that we are denying ourselves as children, for our children we are denying things that that will help later on. Yada yada. We need this stuff. It's connected. Hakuna matata. [Nature makes me feel] Connected. Vulnerable. Scared, sometimes. Humbled. Nature humbles you in so many ways. I practiced yoga for 7-8 months. You know, grounding, breathing. I mean just breathing exercises. Just a point of going outside and sitting down and just trying to combine your energy with the energy that is around you at the moment. Just letting go and realizing that you don't enjoy being giving into the bad nature or God or whatever you want to call it has it all in the big picture, and you gotta just enjoy the ride. It's hard. It's hard but it's very liberating when you understand it. Nature got your back."

Charlie, a 54-year-old White man who sleeps outside or in his car, said, "I don't have to think about feeling it, I experience it. Love nature. Easy. I feel at peace. Tranquility. Peace. Serenity. I am always contemplating. I can't shut my brain down. That is the problem. It would be nice to go into Zen. Continual contemplation. Zen mode would be cool. It's like hibernation. Like bears go into hibernation. I do it every day. I meditate... my existence, is like a state of meditation. Something pops in my brain. At peace. I don't schedule it (meditations). Even in the process, not just afterwards. In the process. Because it's time to kinda like chill, relax. I have to really know someone and trust them,

sit on some grass, you know, meditate. Which I'm actually pretty cool with. But I have to know the person. And they have to know me too.

Firuláis, a 67-year-old Hispanic man who sleeps in the shelter, said, "So I enjoy, I try to breathe. When I see something [in nature]. Like breathe and be thankful to God and enjoy. But my religious meditations are really, how should I say? ... Relief of fears. And I feel the protection of God."

Eunice, a 23-year-old Hispanic Mexican American woman, who sleeps outside or in hotels, said, "I'll sit down [in nature] and I will focus on my breathing, and I'll think about anything that I am supposed to in my life that I haven't had a chance to think about while I am doing anything whether it be at work or after work. Doing things that I do to de-stress. I'll take time to really reflect on my life and what's going on. But I don't have a special ritual or process. Maybe if I had more stuff, I might bring like a towel or a blanket. And maybe bring some stuff like crystals or maybe herbs, like sage and lavender. Make it more of a sensory experience, but I usually just bring myself. And I'll just find somewhere to sit... Usually afterwards, I feel like a lot more reassured. I feel like I can understand, and I have problem solved. So, I feel a lot less confused, usually. Because I go in there with an intention to think through something. And ideally by the end of it, most of the time I will come out of it and I will have thought it through. And I feel better."

(Hank, a 49-year-old White man who lives outside, said, "Yesterday we were doing tai chi in the water, shallow water, and we remained quiet. And we didn't speak. And there was actually three of us doing it. And everybody was quiet for about 3 hours. It was very peaceful and different. And the moon was full last night, so it was perfect... I felt uh healed but yet I wanted to get more. I wanted to have more experiences to be able to relax in that manner to meditate. Cause I'm a newb. It was hard to release at first, to let go, of thoughts and stuff. But with the water, sounds of the water babbling, so I picked up some rocks in the water and I would throw them in the water gently, so they would make a noise like a "plup plup plup" (He makes rock splashing noises.) and the different size rocks would make different noise, and like a chime, yeah it was pretty cool."

Theme 3: Nature as a Resource

Subtheme A: Using nature as a resource to meet basic human survival needs

Some people see nature as a resource to meet their basic needs like food, water, shelter, bathroom, exercise, cleanliness, and being the right temperature to stay alive and comfortable.

Some people also talked about the intrapersonal skills they gained by using natural resources to survive themselves, like learning patience, and being able to find, prepare and sell plants or water they found in nature. When asked about the positive aspects of nature and its resources,

participants said:

Hayato, a 19-year-old Asian man who lived in the shelter at the time of the interview, but had been outside previously, said, "Shade. Sometimes I like trees. I hope there are trees to shade me from the sun while I am walking. The wind, I like, because I get cooler."

Jonah, a 29-year-old White man who lives outside, said, "Go jump in the lake in your clothes to clean them after a 3-day long bike ride. It is fun, exciting. Clean yourself off, sweating, dirty. My beard was grimy, skin itchy, feels better once I rinse off from the heat. Piss on a tree. Workout. Outside I am biking, swimming, balling. I'm very active."

Dakarai, a 38-year-old African American man who lives outside, "Nature's our friend. It's like I'm really not homeless. Can eat berries, take a bath in the river. The ground is my bed. We've got everything we need to survive. Why tear it down to make resources? Is littering recycling? [I] like fishing."

William, a 35-year-old White man who lives outside, said, "[I use nature to] meditate, throw knives, use trees and rocks for exercise, swim in the river for exercise. They've made shit-tons of metal machines when you can just go in the river and find a rock to exercise on."

Firuláis, a 67-year-old Hispanic man who sleeps in the shelter, described how prior to entering the shelter, he used nature as shelter when he could no longer stay in his friend's house although he was still homeless. He said, "The last time I was camping was when um the friend who was having me in one his ... rooms in his house, he needed the room, so I began I began going camping again. And I did enjoy very much, because it's beautiful. I went to a couple of camping sites in New Braunfels, around the river."

Oliver, a 59-year-old Native American Cherokee man who lives in the shelter, said he collected natural resources for himself and to sell to others to meet his own basic needs for food, medicine, and water. He said, "In Virginia Appalachians...I know all the right, you know the birch and the ginseng where I can make money with. I mean I knew all the resources, the natural resources. Springwater. I knew where all the springs were. I would dig up the roots and um what you do is you dig 'em up and you let 'em dry out, and once you dry 'em out, you know, you build up as much as you can cause it's really expensive, and you sell it."

When I asked Eunice, a 23-year-old Hispanic Mexican American woman, who sleeps outside or in hotels, how her thoughts on nature had changed since sleeping in parks, she said, "Sometimes I'll think about like, how it was in the past. What people must have done before we became civilized. Maybe I am a little more patient, I would say." She is describing how she grew as a person in her intrapersonal skillset.

Bert, a 29-year-old Cherokee and Hispanic man who lives outside, enjoyed using trees as a shelter to sleep in nature. He said, "In my past, when I was previously homeless, I was

more in the woods, and sometimes I would climb a tree. Kind like maybe not that one here but that far one over there. I would climb up to where it v-s off, and then just you know, put up a nail for my bag, put up a couple boards, so I can sit comfortably, and just sit there. Pass out maybe. There were spiders up there too, so I kinda tried to avoid doing that. ... I usually had a little rope, hanging. I wrap the rope. I'd tie a rope to the tree, and I tied a knot in it. And I'd leave it in my hand. That way, if I ever felt the rope tighten, I needed to wake up. I'd only climb to where there would be a branch. Like where it would v-off, some 6, 9, maybe 10 feet off the ground."

When I asked Juanita, a Hispanic 32-year-old mother of 2 elementary aged children, living in a hotel, "How do you connect with nature?" Juanita said she enjoys exercising in nature. She said she would "pick up trash, just go out there and enjoy it. Just walks, runs. [Before homelessness it was] just work, hiking, I went swimming a lot. That's about it. [During homelessness it is] just not able to leave, not able to go anywhere, really. Anxiety, depression... I love nature.

Subtheme B. Using nearby nature as a resource for human survival and emotional support

Some participants brought up nearby nature as a resource for human survival and emotional support. They also defined nearby nature as pockets of greenspace that others might not notice or utilize.

Bert, a 29-year-old Cherokee and Hispanic man who lives outside, said, "You can...observe the wildlife...you look at these animals and it will tell you more or less whatever it is you can consume to survive. 'Cause that is one class of food. And you can look at a different animal. It's just knowing your surroundings. Really. Most definitely, you can learn from animals actually anywhere you go, you just gotta be observant, but to actually listen 100% and just observe nature, I think I have to be out, we go alone. Low cut grass, still kind of close to civilization is good. From nature, you can provide for yourself in different ways. ... Nature is not gonna tell you, don't eat this, don't eat that, you can't start a fire here, you can't sleep there... Well, nature talks to you. But it's not gonna limit your ability to live openly, I guess. But out in the woods, nature will definitely tell you, again, if you're listening, where it's safe to be around and where to avoid certain animals, I guess. Another way is the birds like buzzards. They will definitely tell you where there is food.

William, a 35-year-old White man who lives outside, said, "Nature's more forgiving than civilization. Nature pockets in civilization are cool. I can spend a lot of time in nature. What is nature? Woods or patch of trees surrounded by a 4-lane highway."

Category 2: Negative Perceptions of Nature

Theme 1: Nature Disconnection

Subtheme A. Preferring indoor built environments or specific climates and terrains

Not everyone had a positive connection to nature. Some people preferred built, indoor environments, and prior to being homeless, some participants had negative views of nature.

Franco, a 29-year-old Hispanic man who lives in his car or hotels, said, "I would have rather not been out in nature before I was homeless. I am the type where if I feel stinky, I have to be in the shower. So, I take 5-6 showers per day, because I do not like feeling like that."

Pedro, a 29-year-old Hispanic man who lives in the shelter, said, "I am not a fan of nature. It never spoke to me. I don't like humidity and the East Coast woodland. I don't like the East Coast or Texas nature. This is not my home. It angers me. If everybody was homeless too, I'd be able to, I'd be able to appreciate nature more. Hunter-gatherers. If we were all still hunter-gatherers living in nature together, we can all appreciate nature. But I am homeless, and they are not, so we don't appreciate nature."

Subtheme B. Sources of discomfort in nature: the elements and the insects

Some participants found aspects of nature hard to handle, survive and cope with. Things like the heat, rain, wind, snow, and other elements, as well as insects were sources of discomfort and danger. They spoke of being more aware, in order to be able to take care of themselves in nature.

Hayato, a 19-year-old Asian man who lived in the shelter at the time of the interview, but had been outside previously, said, "Nature is important, because I am outside. I have to worry about what time of day it is if it's too hot outside. I hate mosquitoes biting me at night! I put my shirt over my head, but then I can't breathe. Every few hours I have to take my shirt off my head so I can breathe, but then I get bit. I wear long pants, long sleeve shirt, shoes, and socks. Mosquitoes poke through the shoes and socks, and I hate that."

Marie, a 42-year-old White and Native American woman who lives in the shelter, said, "The sun is hot, and I am hot all of the time. I don't like it. I am not angry. I like winter. I used to like it, but now I'm homeless and it's too damn hot! I hate bugs and bug bites. I messed up my skin by scratching. Winter freezes their little asses, so I like winter. I spray bug spray and I spray it at night. If not, I have to fight all night against bugs. The fight is real! Ladybugs are okay. I like grasshoppers, but not those big freaky ones. I don't

connect with nature, I connect with animals, but not creepy bugs.

Pedro, a 29-year-old Hispanic man who lives in the shelter, said, "I hate humidity, and kinda get used to mosquitoes. I can't appreciate nature with so much humidity when you are homeless. I like nature a lot less, now that I am homeless. Trees don't do it for me. I don't see animals here [in Texas]. I'm allergic to ants in Texas and hives. Hives have put me in the hospital, from psychological stress.

Oliver, a 59-year-old Native American Cherokee man who lives in the shelter, said, "This Texas heat is miserable! Especially now that I am older. Now when I was younger, I probably could handle it a lot better, but right now, to be honest with you, I'm not handling very well. Yeah. The heat just wears you down and I'm working on the side of a house that has no air conditioning. Nowhere. And it's brutal. It's harder to stay cool in this [Texas heat wave], than stay warm [in the snow of Virginia]. The snow up in the mountains [of Virginia], it can be brutal as far as the winters go. It's really cold, but I don't know, I still like it. I can stay warm. "

Henry, a 43-year-old Hispanic Native Mexican American man who lives outside, said, "If it rains on you and you are not ready, everything is soaked when you are stuck out there for 3 days trying to get everything back to the way it should be. If the storm is coming and you are not ready, you can't bunk down."

Dakarai, a 38-year-old African American man who lives outside, said "[I hate] the elements...I hate mosquito bites."

William, a 35-year-old White man who lives outside, said "[I am irritated by] rain and wind and bugs. Don't like the wind the most."

Bert, a 29-year-old Cherokee and Hispanic man who lives outside, said, "I wish I could kill all the flies. Mosquitoes are pests."

Eunice, a 23-year-old Hispanic Mexican American woman, who sleeps outside or in hotels, said, "Sometimes there are aspects of nature that are pretty weird. Anything negative, like mosquitoes, leeches, ... poisonous bugs or poisonous plants."

Jonah, a 29-year-old White man who lives outside, said he thinks about the heat and sun when planning his travels as a person without a home. He says, "I am riding my bike to Hillsborough, Texas today, traveling from San Antonio by bike. I rested here [in San Marcos] for 1.5 days because of the sun. I am planning to go to Austin. Then the next town where there is a lake. I move at night. I go from Austin to Waco on the bike 60 miles. That's 30 miles per day in sun and heat, then it's 10 miles from New Braunfels to here. Tonight, I ride 8 hours. I hope to get 50 miles. ... I have 2 daughters. ... I am going to start over in Hillsborough to raise my kids and stop being a drug addict. ... I didn't go to school as a child; I lived in the street. I have certificates and I work on trucks." Because of the elements, such as heat, he must ride at night to attain his career and family goals.

Subtheme C: Wild animals that make them feel scared or angry

Some participants also talked about wild animals that make them feel scared or even angry.

These are aspects of nature that cause them distress.

Pedro, a 29-year-old Hispanic man who lives in the shelter, said, "I hate deer. They are lifeless, because they trot and run away. Petting a deer is not soft, and that makes me mad. It's supposed to be soft, but deer fur is hard and matted. I dislike Canadian Geese. I like it when they stop traffic. Other people dislike Canadian Geese and get really mad when they stop traffic. It's shocking. 12 geese walk across the road."

Bert, a 29-year-old Cherokee and Hispanic man who lives outside, said, "Last night, I slept over by the bridge, away from lizards and snakes. Quite peaceful. If there's tall grass, bullfrogs, I usually try to avoid it."

Hank, a 49-year-old White man who lives outside, said, "I get uncomfortable in nature, let's say I'm walking barefooted in the river, and I'm not sure what's bumping my foot. And where the snakes hide out that aren't ...cool."

Oliver, a 59-year-old Native American Cherokee man who lives in the shelter, said, "It was just me and my grandmother. She was blind, so I had to get up in the morning and sweep the timber rattle snakes out of the house before she got out of bed, because I didn't want her to get bit, you know. Some of them were so big, you couldn't sweep them out. You had to get a stick and try to get them out."

Subtheme D. Disconnection to nature or other humans now that they have been homeless

When asked how people felt about nature now that they have experienced homelessness, some felt negative things towards nature and disconnection to nature as well as other humans.

Hayato, a 19-year-old Asian man who lived in the shelter at the time of the interview, but had been outside previously, said, "It's limited. Sometimes I like sitting outside and relaxing, but I'm kind-of like tired of it [nature] now. It's good for shade. I hate the heat! It is really hot."

Limbani, a 38-year-old African American man who lives outside said, "...Now that I am homeless. Lost, confused, stressed. Self-esteem sometimes. Nobody to talk to. Tree doesn't have a feeling about itself. I feel about nature: pain and suffering. Mother Nature do get mad."

Jonah, a 29-year-old White man who lives outside, said, "Death is a negative feeling about nature. For a tree to die and another tree to come in, it's okay, but I don't want to

die. The circle of life is good for nature, but not for a man. You want to be immortal? No, I want a group of people to understand and live in harmony.

Theme 2: Environmental Threats and Degradation

Subtheme A: Global warming

When asked to discuss environmental threats they perceived, several people brought up global warming. One person thought it was not real.

Hayato, a 19-year-old Asian man who lived in the shelter at the time of the interview, but had been outside previously, said, "Heat. Global warming makes it more difficult for other people around the world."

Dakarai, a 38-year-old African American man who lives outside, said, "[I feel] neutral about the Earth itself. The sun is burning it up really hot. Global warming. Not a lot of crops growing, water's drying up, not enough open land for someone to set up a tent to live with family."

Eunice, a 23-year-old Hispanic Mexican American woman, who sleeps outside or in hotels, said, "Maybe pollution and I guess global warming. Other than that, I don't think I know enough about environmental dangers."

Oliver, a 59-year-old Native American Cherokee man who lives in the shelter, said "You know, I do believe global warming is a problem. I mean it's just my thought. Because I seen a thing on my phone yesterday. It was off in the UK, for the first time, *ever*, that they got a heat advisory. That could cause people, that could cause death, you know? And they expect a lot of death."

Subtheme B. Encroachment of the human-built environment on nature

Participants brought up the encroachment of the human-built environment on nature that negatively affects them. Some discussed capitalism and its relationship to homelessness.

Dakarai, a 38-year-old African American man who lives outside, said, "Nature is dwindling fast. Stores, stores, more stores! I like the river. So many malls! Way more out there to see. Hopefully, we can preserve what we have left. We've got everything we need to survive. Why tear it down to make resources? Is littering recycling?"

William, a 35-year-old White man who lives outside, said, "Humans encroach on nature. I've never been in nature because humans have always been here. California has cordoned off areas to be naturey, and that's a close type of nature where I could have stayed. All

state parks. Texas has Frontage Road systems that are different than all the other states, so people use as much gasoline as possible to get where they are going, because Texas makes a lot of money off of oil. There's a lack of public transportation except for here and Austin. I am angry about it, and it has something do with nature. I wonder if it's bad for nature, like it's bad for me? [There's] needless development and needless waste that capitalism exudes. People forget about, so obsessed with the aesthetic of trash visible. They pass the buck on to other things like homelessness, disenfranchised people, instead of dealing with the waste issue. Homelessness is a symptom of capitalism...Born consumer, capitalist fodder." He also took issue with landscaping and was concerned about planting invasive species rather than native plants. He said, " I hate landscaping. You take invasive species, planted it, and told everyone they have to do it. People have trouble growing it. Nature is subject to capitalism. Trees are planted in rows, just to be cut down when they decide to. Trees ... have compassion fatigue after all the years of being exploited."

Eunice, a 23-year-old Hispanic Mexican American woman, who sleeps outside or in hotels, said, "We have like cities and societies that are very far away from nature, like they are very industrialized. But pretty much everything has a source in nature, one way or another. So, I think it's important for that reason, because we couldn't live or sustain anything without nature. Or even create infrastructure without nature... Even before we industrialized, we used nature to create homes, clothes, products. ... We do that less now, but ... it's still something we have a long history of doing. ... And we really shouldn't shift away from nature. I do think that maybe the cities are bad, because they're trying to shift away from it, bringing a lot of pollution."

Pedro, a 29-year-old Hispanic man who lives in the shelter, said "We should move all of the people in the populated areas of Southern California to the inland empire, so we can enjoy it as a Mediterranean nature area." He thinks it's too overpopulated and would rather see nature there than people and buildings.

Subtheme C: Perceiving themselves as an environmental threat and taking actions to care for the environment and animals

Some participants perceive themselves as an environmental threat and they try to take actions to care for the environment to be less of a threat to animals and nature.

(Hayato, a 19-year-old Asian man who lived in the shelter at the time of the interview, but had been outside previously, said, "I try not to scare off deer. I try to avoid it. I almost got a deer hit, because it was looking at me, but it went into the road when it saw me. But it didn't get hit by a car. Because humans get hit all the time, deers don't do any better.

Limbani, a 38-year-old African American man who lives outside, said, "I was with this girl for 2-3 years picking up trash. So, I don't. Everybody's trash. Noise in the nation to explain Mother Nature. Everybody needs to stop littering and have clean drinking water."

Jonah, a 29-year-old White man who lives outside, said, "To help the world, I do not litter. I put my trash away after I eat, clean the table. Recycling paper. A detergent box can become a dryer box. Don't litter cigarettes, because I have a pipe on me. I'm not catching nothing on fire, because I don't smoke cigarettes. I am like Smokey the Bear. I prevent forest fires."

Dakarai, a 38-year-old African American man who lives outside, said, "The trash. The pollution. There is a lot of issues. I used to pick things up a lot, but I got tired of cleaning up after other people when I can. Sometimes I throw my cigarettes in nature and don't care, but I used to be better. I don't think about it, but I should. The person who gave me the cigarette box didn't throw them on the ground but kept them in the box."

William, a 35-year-old White man who lives outside, said, "I want to build an island on the ocean made out of plastic and get soil on it to grow things. On my island, no capitalism is allowed. Remember the sea turtles in the ocean, how the plastic in the ocean is hurting the turtles? I repurpose the things I find. I reuse plastic bottles I find in the trash. I found 5 gallons of water in 3 trash cans. I can get water, too much water. I can get food in the trash. Plastic bags in the trash. Reuse from trash. I don't believe in recycling because it's a scam. It was good at the start, but they overproduce bottles, so now who cares if you recycle plastic? Recycling plants produce just as much smog as factories and are a waste. People only recycle for the money. They sell it for 10 cents or 50 cents. Recycling is an excuse to produce more, a selling point, but it causes more problems than it solves."

Firuláis, a 67-year-old Hispanic man who sleeps in the shelter, said, "The ocean is kind of dirty with all the trash that we throw. And at the same time, as we were saying at the beginning, we just say from now on, we are not going to, we are not going to cause any, any garbage, because in our economical and human development, we need to eat and the food has to be in containers, so there was a point where I decided not to use straws anymore. Because I saw a picture of a turtle with a straw in her nose." He said, "I did have my metal straw and I am going to use only this one. Always. But it was not practical." He explained that he believes the long-term solution is to use agave and corn-based plastics to make disposable straws. He also described his former city's efforts to control the amount of cars on the road by telling people who was allowed to drive on any given day, to reduce smog pollution in a valley in Mexico. He participated in the effort, and he felt the effort was successful in reducing air pollution.

Oliver, a 59-year-old Native American Cherokee man who lives in the shelter, said that he thinks fur trapping is unethical. He discussed how he sabotages steel-jaw leghold traps because he thinks they are cruel to animals and how he doesn't get along with his cousin because he is a fur trapper. He says, "I don't like people trapping animals either. I used to find traps and throw 'em away. If I found somebody's trap line, I'd throw them away. Cause I don't agree with that. You trap just for the furs. Sell the furs. I would always take them and throw them away somewhere they couldn't find them. Some of them is pretty dangerous. Especially bear traps." He likes bears and he thinks the way that the Chinese

kill them to get their gall bladders is cruel. He celebrated an arrest of these people who were cruel to animals by saying, " You know China was paying these people to kill black bears and get their gall bladders and uh yeah, I had a problem with that. So did the feds actually, 'cause they busted them." He laughed. "And they went to prison for it. I mean that's...sad. You're gonna kill the bear, not for the food, just to take the gall bladder, and sell it to China? ... Why would you do that?"

Subtheme D: Different types of pollution found in nature and what they are doing to resolve it

Many people pointed out that there is a lot of different types of pollution in nature or other things that degrade it and they then described what they do to fix the problem, if anything. They said the following when asked if they were concerned about nature problems and if they were doing anything about them.

Kevin, a 48-year-old White man who lives in the shelter), said, "[I am] picking up litter on the trail when you see it."

Limbani, a 38-year-old African American man who lives outside, said, "Keep the earth clean, no more trash. Less trash. Stop polluting, using the bathroom. Dump truck with it back open and papers flying out in the breeze! Boy's trash and girl's trash. Everybody's trash! I work site in the highway. Sometimes it's men's clothes or women's clothes. Can be any gender's trash. See a lot of trash on the highway job. "People speed up the pace," he say. Boss man get mad. I am done with job. Aint making no good profits. Don't want to be treated that way.

Jonah, a 29-year-old White man who lives outside, said, "Fertilizer going into the water causes algae to grow too much in the water, and that is bad. I watched National Geographic. Recycling. Trash on the highway when biking. Pollution, litter."

Marie, a 42-year-old White and Native American woman who lives in the shelter, said, "Pollution: trash in the water and sea. Coral reef pollution, because they'll be gone."

Dakarai, a 38-year-old African American man who lives outside, said, "I love nature, to clean up trash on the ground. It's a lot of work."

Bert, a 29-year-old Cherokee and Hispanic man who lives outside, said, "Carbon Dioxide gas. I mean as far as being homelessness. Right, so say somebody is walking down the street, or you know, 100 people walking down the street, you know all these vehicles passing by. Sure, we're out in the open free air, but still, how much of that are we still breathing in, you know? Too much pollutant."

Charlie, a 54-year-old White man who sleeps outside or in his car, said, "The disposability ... of material [or] consumer ... items. Where people just throw things away. Disposability. And then it lands in a landfill, it becomes toxic, then it can seep on down into the aquifer in the water system."

Eunice, a 23-year-old Hispanic Mexican American woman, who sleeps outside or in hotels, said " Oh yeah. I'll pick up litter. That's about it I guess. Like I am not a part of any groups that are more like proactive on it."

Hank, a 49-year-old White man who lives outside, said, "I'm always concerned about litter, so I pick up trash. Wherever I go camping, or something, I'm posting up out along the river, or whatever, I will actually clean it up first before I chill. And then I clean it up when I leave, too."

Oliver, a 59-year-old Native American Cherokee man who lives in the shelter, said, "There's a lot of things going on. I mean people are nasty now. I mean not right here. I mean if you go down by the access road, I mean, trash is everywhere. It's like nobody cares. You know? I mean, man, I mean, you live in this world, why would you do that? Don't care about anything or anybody. Don't care about the environment. I mean you know, me and my wife, we've been homeless, but that don't mean that you can't be clean or take care of yourself or the environment, you know?"

Juanita, a Hispanic 32-year-old mother of 2 elementary aged children, age 5 and 8, living in a hotel said "[An environmental issue I'm concerned about is] the trash. We need more recycling bins. In more public areas."

Subtheme E. Noticing human-caused extinction of endangered animals they felt was beyond them to fix, so they relied on a higher power

Some people noticed there have been human-caused extinctions of endangered species but felt that it's beyond them to do something themselves. Therefore, they relied on nature, magic, or God to fix things.

Henry, a 43-year-old Hispanic Native Mexican American man who lives outside, "We think that we have a big impact on nature, but we really don't. We have a minor impact. Nature is gonna be just fine. It was fine millions of years before us. It will be fine millions of years after us. Our big consciousness gives us fools to think we are the damn dog out here, but we're really not. There's other species on this planet trying to survive. Animals. So, I'm not worried about any of it, really. Cause really, nature is gonna be fine without us. Maybe we caused a few animals to go extinct because of this, this, and that, and that kinda sucks but there are 85% of all the species on this planet are already extinct, so we got, everything is happening for a reason. Nature knows what it's doing. I trust

that.

(Treyienne, a 31-year-old White man who lives outside and is fully absorbed in remaining this way, so he can practice his nomadic Maji religion, said, “I feel that nature has been uh like empty. Um, in [my] past lives, nature and the woods were filled with life. There's all kinds of stuff inside of it. And now it feels empty. Like nothing's happening inside nature, the woods, and it's weird to me. It feels as if it's like, dead. Because everything has consciousness. Everything has life and spirit. You know what I'm saying? And now, they just, it feels... dead. The trees don't... the trees and the flowers and the plants don't like behave as if it has life, and all things have life. You know what I mean...Um, like for bees I have done magic to help harmonize the colony of bees on the planet.”

When asked if there were any environmental issues that he was concerned about, Kevin, a 48-year-old White man who lives in the shelter stated, “Not really, because I believe Christ will come back and restore Creation.”

Jonah, a 29-year-old White man who lives outside agreed: “The world will be burned and renewed, so it don't matter [regarding environmental degradation]. I meditate on the word of God and the Bible.

IX. DISCUSSION

The data collected in this study shows that people experiencing homelessness have both positive and negative perceptions of nature. I will delve into explaining how the theoretical frameworks are supported or refuted by the data. I will discuss how each of the three research questions was able to be answered by the data or not able to be answered by the data.

The data supports the Biophilia Hypothesis, because the respondents showed their positive relationships with nature activities before and during their experience of homelessness. The Biophilia Hypothesis supports the idea that humans will naturally focus on life and lifelike processes and could even make art in favor of it. Many participants had made positive connections with nature, wild or domesticated animals, or life-like processes prior to being homeless. Some people talked about exploring nature, on foot, by motorcycle, or by car. Some forged connections with fish or aquatic reptiles and amphibians, by entering their habitats through getting in the water with them or by going to an aquarium. Others enjoyed birds as a whole, specific species of birds, or specific types of mammals. Many people celebrated life and nature by making videos and photos on their phones of it or building rock cairns, which they could then photograph. One person made nature drawings.

There were three main themes that supported the Biophilia Hypothesis: Nature Connection, Nature as Health, and Nature as a Resource. The many subthemes under these showed how much of a positive force nature was in the lives of the PEHFI, and how naturally focused they were on life and lifelike processes like the Fibonacci sequence to help them develop a sense of self and existential meaning. Many participants derived existential meanings from nature and its relationship to their spirituality and philosophy in life. Their direct interactions with plants,

animals, wind, water, and rocks, all of which brought them feelings of love, appreciation, and relaxation, helped them sense their natural connection to living things, thereby supporting the Biophilia Hypothesis. This was true despite some of these things being non-living. Through these interactions, they enjoyed using their 5 senses and growing their curiosity. Most sensed their affinity to life through their intuition, discovering that animals in nature could be trusted to teach them how to use resources in nature for their own survival, and get their mental and physical health needs met in nature. Their intuition supported the Biophilia Hypothesis. Their concern for nature and desire to protect animals and pick up litter also supports the Biophilia Hypothesis. In certain cases, the data rejects the Biophilia Hypothesis due to the PEHFI's struggles with the elements and bugs, or preference for the indoor built environment.

Another important framework discussed was that of Risk and Protective Factors. Nature can act as both a protective factor and a risk factor for the PEHFI. Nature acts as a protective factor for PEHFI in the following ways. PEHFI are gaining protective factors by using nature for spirituality, art, a sense of place, connection to people or animals, and as a means of survival to get their basic needs met, as well as some of their mental needs through their own nature-based mindfulness activities or grounding activities they do in nature to soothe themselves. Nature creates risk factors for PEHFI in the following ways. PEHFI are experiencing risk factors like dealing with the elements, insects, and dangerous wild animals. Some of these struggles have led to a feeling of disconnection with nature and humans and increased anxiety, especially when it comes to surviving heat and the existential risks of global warming. The pollution created by other people in the air, water, and land, is adversely affecting the PEHFI, who rely on the air, water, and land for resources they need to survive. However, they do use their agency to pick up whatever litter they can to improve their own living situation, so that they can turn a negative

risk factor into a positive proactive protective factor for themselves and the environment.

The data supports Ecological Systems Theory, because the PEHFI are lacking basic community interactions with school, work, religion, and most media due to their situation of being homeless. In these conditions, they seek and find religion and spirituality in nature, and a few create bonds with current friends in nature. Mostly, the PEHFI strengthened ties to their former family members, even if they were no longer there. They did this by connecting to the hills and the stars that they once shared. Many people recalled positive interactions they once shared with family members involving hunting, fishing, caring for domestic or wild animals, or being a part of the Boy Scouts. Using nature to help them connect with lost or current loved ones bridges the divide between community and nature.

The data supports the Social Ecological Model, because the South Side Community Center provides a sense of community to people that usually have only themselves and their own intrapersonal skills to rely on. The intrapersonal skills that people gained in nature were good listening skills and awareness, patience and understanding of pre-industrial humans, and being prepared to deal with difficult weather, like rain. They also learned self-reliance and deepened their relationships with their higher power. This protected them from problems with self-esteem and existential crises.

The interpersonal traumas that they carried as a community were huge. In their families and close circles of friends, they had deaths, abuse, drug addiction and recovery, mental health struggles, generational traumas, being raised on the streets, lacking educational opportunities, and multiple episodes of homelessness in their lifetimes.

Despite these difficulties, they had interpersonal strengths, like learning how to sell natural resources that they depended on for their survival to other people, such as ginseng and birch and spring water. They also continued to get back up each time a person in a relationship knocked them down. They developed extremely high levels of perseverance.

They continued seeking healthy relationships that would give them connections and resources, like the South Side Community Center does. Some sought and gained certificates for work like the certificates to work on trucks, and most who lived in the shelter were gainfully employed as they built up an income base to try to put an end to their homelessness. This was creating a community of the working PEHFI, a smaller subset of the PEHFI that I could interview. All were a part of the SSCC, by simply showing up each day to get food and/or other resources and talk to each other. This community was what allowed me to come and be a part of their smaller world to understand their interpersonal relationships with each other, their family, friends, and the SSCC community. I was able to see how they use their intrapersonal skills to use nature as a resource for mental and physical health. Their participation in the community helped them discuss government policies affecting them as PEHFI affected by the encroachment of the built environment on nearby nature they depend on for resources and policies surrounding global warming and pollution, which they are concerned about and want to take an active role to be environmental stewards. Some people were concerned about other issues like invasive plants, the difficulties of finding and implementing a good biodegradable straw in restaurants, and how they might go about saving domesticated stray and wild animals in need of help. I learned they are nature stewards who care about the ocean, the river, the ground water, the land, and the air. A nature steward is a person who cares for the land and supports ecological conservation efforts.

My first research question asked: How do people experiencing homelessness or food insecurity (PEHFI) perceive nature? People experiencing homelessness or food insecurity perceive nature in both negative and positive ways. The perceived negatives are the heat, wind, rain, and cold, and biting insects. These things give them great discomfort. They agreed that the heat was the worst thing. This was likely because the heat was very high at the time of the study, at 106 degrees Fahrenheit. There was a heat advisory to stay indoors, which they could not always do, due to their status as PEHFI. This became a huge daily struggle for them to survive. They also disliked poisonous plants and leeches. As for animals which made them feel angry or scared, which they felt might endanger them, they listed a variety of reptiles and amphibians, like snakes, bullfrogs, and lizards, and felt concerned about spiders, deer, and Canadian geese. The perceived positives were shade, trees, beauty in nature as a whole, rocks, and the ability to make cairns and other artworks based on nature. They loved beautiful or inspiring wild animals, especially if they could observe them or care for them in some way. They appreciated the ability to soothe themselves in nature using their 5 senses to immerse themselves in the rhythms of nature, like the daily sunrises, the call pattern of the cicadas that can put them to sleep, or the pattern in which the jungle grows, connected to the symmetry of nature, also known as the Fibonacci sequence.

My second research question asked: How do race, gender, or age affect nature perceptions, biophilia, biophobia, or overall described anxiety in PEHFI? A few trends existed in the data, however, because of the small sample size and this study being qualitative, this question is beyond the scope of this research. This would be a good question to ask in a future research study, in which there would be 500 participants. They could do an ANOVA on the State Trait Anxiety Index like other qualitative studies have done. Anxiety could be measured in the

PEHFI, before and after a treatment, like a 30-minute nature walk done every day over the course of 7 consecutive days, to see if different races, genders, and ages had statistically significant differences in how they felt in nature, before and after the treatments.

My third research question asked, "Do PEHFI experience any sense of purpose, nature-based behaviors, or connectedness to nature, themselves, and other humans?" PEHFIs do experience a sense of purpose, nature-based behaviors, connectedness to nature, themselves, and others. First of all, all participants experienced this sense of purpose when thinking of their role as nature stewards, and acting on their thoughts with actions like buying metal straws to protect sea turtles or picking up their own litter and that of others they found in the river or the land where they were living or traveling through. There were participants who believed that the higher powers of God, Magic, or Nature would take care of nature. These ones belied in a powerful outside force taking care of the planet, so it was not as much of a priority for them to take direct action. Even for these four individuals, sometimes their thoughts and prayers to their higher power led to positive actions like picking up litter or connecting to nature, or positive connections to nature, like leaning against a tree to feel the heart of the tree. Secondly, nature-based behaviors included using nature as a resource for helping provide for their physical and mental health, including as a support or basis for their spirituality. Finally, many felt connected to self or others. When they went into nature alone, they were sensing solutions to their problems. They used things like stars to connect with estranged family members. All in some way did connect to nature itself: the trees, wind, water, animals, sunrise, sunset, nature sounds, and beauty found in nature.

PEHFIs experienced a strong connectedness to nature, themselves, and others when engaging with nature. Passmore and Holder (2017), found that students focusing by photography on

nature versus the built environment led to a positive affect and more prosocial thoughts, or greater connection to the Earth, themselves, and others. The PEHFI population showed a similar outcome when discussing their concerns of the built environment encroaching on nature and their desires to see the beauty and art of nature, create their own art out of nature, and take photos of nature if they had the opportunity to. They felt more prosocial and positive when discussing the beauty of nature and were less prosocial and positive when discussing the encroachment of the built environment on nature and pollution. They were angry at humans and disconnected from them when discussing these things. However, being in nature, looking at the stars or exploring the hills made them feel connected to other people, like humanity, other cultures who lived off the land, and their ancestors, family members, and friends. Being in nature also helped them feel connected to animals, like pets, livestock, and wild animals.

More studies like those conducted by Marchand et al (2019) should be conducted on people experiencing homelessness. These researchers took housed veterans with mental health struggles sailing, where they did mindfulness-based nature activities in the boat. This caused a significant decrease in the mental health symptoms. More studies like these should be done, because people experiencing homelessness have more positive perceptions of nature than negative ones.

Interventions and research should be conducted to increase positive perceptions and mindfulness and decrease their anxiety.

X. IMPLICATIONS FOR PRACTICE

It's important to know that people experiencing homelessness can have positive perceptions of nature for the following two reasons. First, they may have the potential to serve the environment as stewards of nature in a paid capacity working for entities such as the original Civilian Conservation Corps. Starting in April of 1933, during Great Depression, the original Civilian Conservation Corps brought 300,000 young men into the western USA wilderness to help build parks and trails within them, while fighting unemployment and homelessness (Onion, A. et. al., 2010). The current National Civilian Community Corps works in a similar way, through AmeriCorps, but entry level positions that do not require a driver's license are only open to men and women aged 18 through 26, with a great deal of flexibility, strength, and stamina (Americorps, 2023). This means that within the PEHFI population I surveyed, many adults would not be eligible. They do not have the stamina, because of the health problems they have as PEHFI. Many of them would be too old to get into positions in the Corps. I propose we make a local Conservation Corps that is not so labor-intensive, for all ages of people who are experiencing homelessness. The labor should be light enough that it would be similar to a Shirin-Yoku stroll through the forest. Low intensity conservation activities could help them escape homelessness and provide a better life for themselves and their families.

Second, as the literature on homeless populations have shown us, these populations suffer from many mental and physical health problems. Their positive connection to nature may be a protective factor against worsening mental stress. If shelters were to adopt nature-based mindfulness programs to support the people who they serve to do activities that promote nature connectedness, they would increase the protective factors available to the people experiencing homelessness. This is a healing modality that they can experience regardless of how mentally ill

or addicted they are. Despite indications of severe mental illness, substance abuse, and addiction in the people whom I spoke to, they all found solace in their positive nature connections.

Programs of financial support or programs providing nature-based mindfulness interventions ought to build on trauma-informed strengths-based research. This is because the PEHFI in my study have a significant trauma background, according to the stories of their lives that they told me. Their lives are not without success, however. The programs should build on these strengths, the ones that they gained from being in nature, experiencing hardship, and developing perseverance and patience after going through that hardship.

Only a few participants used nature hikes or tai chi in the river with friends to connect to current friends, while the rest used nature to remember past family members or friends they once had. If a nature-based mindfulness activity were to be developed for the PEHFI population at a shelter, it ought to include interpersonal interactions so they could begin to form healthy bonds together with each other and not be so alone. They have managed to form deep connections to their inner selves and connect strongly with their own existential, philosophical, and spiritual musings, but their connection to other people is largely missing.

Shelters have an opportunity to also increase the positive perceptions of nature in any activities they hold by reducing the negative aspects of nature that people are afraid of. Activities ought to be held in short grass, away from areas where there may be snakes or other reptiles and amphibians that they are afraid of. Furthermore, people ought to be given the option to wear bug repellent, sunscreen and sit on a blanket, in order to avoid bugs and protect themselves from the sun, and prickly itchy dry grass and poisonous plants. They can enjoy nature sights and sounds safely and comfortably this way.

Extreme temperatures made them not want to be outside and instead go to the inside of the bus station to be cool enough. This has implications for the future for how homeless populations will spend less time outside as our climate gets warmer from global warming. Then, they cannot enjoy the healing benefits of nature.

Furthermore, as evidenced by the extreme heat due to global climate change, homeless populations will be experiencing more and more of these extreme heat episodes, due to climate change. According to the National Oceanic and Atmospheric Association (NOAA), 2020 was the second hottest year in the history of recorded climate data. (NOAA, 2021). According to Sarah Saadian, vice president of public policy at the National Low Income Housing Coalition, “The heat wave is one disaster, but if you’re looking at it as part of a continuum of all these other climate-related or climate exacerbated disasters, it’s yet another example of how the most marginalized populations are hit over and over and over again,” (Rodriguez, B., 2021). As scientists expect these episodes to keep happening and getting worse (NOAA, 2021), the potential of shelter workers to harness the benefits of nature to help the homeless populations will be reduced. Shelters need to do what they can to protect the people using their services from these extremes by making sure we have cooling shelters in place and ways to still enjoy nature despite the increasing heat. Shelters also need to do their part to reduce climate change by reducing emissions, reusing clothing and items, and recycling waste.

XI. LIMITATIONS

This study was limited by the following factors. One barrier to collecting data included people coming sporadically to the shelter to use resources, so the researcher could not know ahead of time whether participants would be there or not. Another barrier was the extreme heat condition of 106 degrees Fahrenheit most days that meant the primary researcher and several participants got heat exhaustion during the research. This required the researcher come every 3 days to recover, due to the sickness caused by the heat exhaustion that lasted 2-3 days. Results or participant responses may have differed if this study had been done in the fall or winter.

The research population was also limited due a lack of access to technology. No one from the study ever tried to contact me through the research email, as most people were living outside and away from computers. Some people living at the shelter were at work during the day and may not have had the time or ability to contact me. They also did not work around computers. One was working in construction and another in a McDonalds. Therefore, we had no way to communicate in between times that we both showed up at the shelter on the same day. It was hard, therefore, to schedule sit spots and interviews.

According to Strehlau et. al., (2017) recruitment and retention of the homeless population is difficult but can be done under certain conditions for a longitudinal study. First of all, the researchers must be a known and trusted person working within the neighborhood and aware of all the resources available in the city for the homeless population. To follow up with the person, they must go through multiple channels, like many different agencies and neighbors in the neighborhood working with the homeless population, in order to find them. The boundaries of each person must be discovered and obeyed to create solid rapport and retention. These

boundaries may include only a female researcher to talk to women who request that, or only meeting outdoors for those afraid to be indoors. Meeting places must be flexible, and at the discretion of the participants experiencing homelessness. Researchers must be confident in handling themselves in poor and violent neighborhoods. They must handle issues like prostitution and childhood trauma with empathy and care, as many participants will have experienced them (Strehlau et. al., 2017). If these criteria are met, it is possible to get results like Strehlau et. al. (2017), who recruited and retained people experiencing homelessness, for several years of their mental health study. They showed a 92% retention for those who completed a follow up survey 6 months after the first contact, and an 84% retention rate for 2 years follow up. Eighty percent were able to finish all follow up visits of the study (Strehlau et. al., 2017).

Due to the extreme heat, participants did not want to be outside for longer than was absolutely necessary, so they declined to participate in sit spots with the researcher, even though they had previously said yes during the initial interviews. Those that did agree had inappropriate boundaries approaching sexual harassment and did not actually follow directions on how to do the sit spot. The sit spot activities were not completed, but I was still able to conduct 18 interviews that yielded rich themes about perceptions of nature from people experiencing homelessness.

Most interviews were conducted outdoors at the picnic table area of the SSCC. This was in the nearby nature of the yard of the homeless shelter during the dinner time hours, because the gym roof had caved in. No one was being allowed indoors to eat their dinner inside the shelter for most weeks during the study. Many people coming to the dinner would take it and go to the bus station to eat, which they were able to use as a cooling shelter. Only a brave few would sit in the

sweltering heat at the picnic tables or on the blanket in the grass with the researcher to do interviews. Shelter residents could go indoors to where they lived, after 5 pm, but the people who lived outdoors could not access the gym where they normally would eat.

One interview was conducted indoors in the chairs by the main office of the shelter, and once construction was completed, I was able to sit in the cooled gym of the shelter to do interviews with a few participants. Due to the study limitations, I could not interview anyone who was experiencing homelessness while they were in the bus station. I had to wait for them to come to the shelter and sit with me there. Sitting in nearby nature with most participants gave me good data about how they felt both positive and negative feelings about nature, because nature was there to inspire our conversations.

An additional barrier was the limited availability of transportation like busses. Their schedules were being limited due to the COVID pandemic. I had no research grants, so my funding to take Uber cars when the busses were not running in the evening was very limited. The heat advisory made walking back very dangerous for my health, so I only tried it one time and then decided not to ever do that again.

Because I have a small sample size, and each person is very different from one another, I have the inability to generalize my findings to a larger population or a people experiencing homelessness in a different location. Eighteen people is a great size for qualitative research, but not for quantitative analysis. I did find themes that people experiencing homelessness did agree on, here in San Marcos, Texas.

XII. CONCLUSION

In conclusion, I discovered that participants have both positive and negative perceptions on nature. Although some did not desire to protect nature themselves, because they felt some other force outside of them would do it, most were in favor of protecting the environment and acting in ways that were sustainable. Most were very concerned about trash in the ocean, river, and land, and led lives in such a way that they were trying to reduce their personal impact and that of others. Most of them picked up litter in the water or land when they saw it, and indeed, it was a part of their camping ethic as they lived on the land and wanted a clean place to live.

Because of this natural inclination towards stewardship, the participants in my research and potentially other PEHFI would be the perfect group to become paid stewards of the land. A nature steward would do tasks such as picking up litter, removing non-native weeds in the land and water, and planting native vegetation in the land and water. The city or a non-profit organization could create a local paid Civilian Conservation Corps for the San Marcos PEHFI. Other cities could certainly do the same. The city or a non-profit could fund and start a program for them to take part in. When the PEHFI were offered ideas on how they could volunteer to help take care of the land, like the Earth Hero app, Texas Stream Team, and the hotline to report exhaust emissions to, they were happy and enthusiastic to take part. Some wanted to know if I knew of any paid opportunities for them to get involved in conservation.

Many participants used their nature connectedness for mindfulness-based activities in nature, like tai chi in the river, sitting in nature to observe their thoughts, swimming in the river to clean and soothe their minds and bodies, or conducting their religious meditations and rituals that helped them to feel safe and well. It seems that most people naturally have an affinity to use nature to

aid them with stress when they have mental health struggles, and shelters ought to encourage this healthy nature connection.

Some people were more connected to nature through animals, others through plants, and still more through the non-living aspects of nature like rocks, wind, stars, and dirt. Some people love to go bare footed in nature. Still more made their main nature connection through water. No matter how they connected, they all found ways to be at peace with themselves, and some also used their nature connection to connect with friends and family.

Some felt nature was an important physical resource to meet their physical survival needs, such as food, water, shelter, and the bathroom. Some were able to make a business, beyond survival, out of selling what they collected in nature, such as ginseng. Building on this concept of nature as a resource, many were concerned about the built environment encroaching on nature and humans running out of the natural resources we need to survive or harming the animals and nature we need to protect. Many found solace or resources in nearby nature. However, some felt the only true place to learn about or love nature was in some far off and wild place with a particular terrain and climate of their preference where they could be completely alone and away from all human beings and structures.

They showed this dichotomy, wanting to be alone in nature far away and wanting to be nearby humans in a nearby nature setting. Some daydreamed of building a permanent home in nature where they could live and not be homeless, but still enjoy the benefits of nature. Some had already lived in homes like these prior to being homeless. Many had prior experiences with camping, hunting, fishing, ranching, wildlife rehabilitation, Boy Scouts, and basic bushcraft prior to becoming homeless. Many of these people already had a strong connection to the land and

nature prior to experiencing homelessness. This also makes them ideal paid conservation stewards because of their prior and current experiences with the land.

Most of them brought up their concerns about global warming and climate change and pointed out that it is affecting them personally, other homeless populations, and other countries and species around the world. Many are concerned about this real and existential threat.

Negative perceptions on nature included many of them mentioning the extreme heat they were struggling with during their homelessness, brought about by the abovementioned climate change. They discussed their struggles with the other elements like wind, rain, cold, and snow. They mentioned dangerous animals in nature that need to be avoided and bugs, because they were being bitten by bugs continuously. They have no relief from bug bites and heat. This has led to some feelings of loneliness, anger, depression, anxiety, and feeling disconnected from nature and other people. There is a feeling that nature is mad at them and is out to get them since their connection with nature is relational. Some were concerned about air, water and land pollution and the encroachment of the human-built environment on nature. Because of their concerns, they picked up litter when they found it in nature.

Additionally, if they chose to focus on the positive aspects of nature, they said they felt happier and safer, than if they were to focus on the negative aspects of nature. So, they encouraged themselves, each other, and me to do that. To feel happy, they like to reflect on times when they had fun in nature, whether with others or by themselves, to help them remember that they will not always be so hot or covered in bug bites. This strategy has worked to cheer them up. The researcher observed them smiling and laughing while telling stories about their fun experiences in nature that gave them positive nature connectivity.

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