10-26-2022

Utilization of Sense of Place and Photovoice Within Social-Ecological Systems Research

Melissa Lau
Florida International University, 3995024@fiu.edu

FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

UTILIZATION OF SENSE OF PLACE AND PHOTOVOICE WITHIN SOCIAL-ECOLOGICAL SYSTEMS RESEARCH

A thesis submitted in partial fulfillment of

the requirements for the degree of

MASTER OF SCIENCE

in

ENVIRONMENTAL STUDIES

by

Melissa Lau

2022

To: Dean Michael R. Heithaus
College of Arts, Sciences and Education

This thesis, written by Melissa Lau, and entitled Utilization of Sense of Place and Photovoice Within Social-Ecological Systems Research having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this thesis and recommend that it be approved.

_____

Nelson Varas-Diaz

_____

Jim Riach

_____

Elizabeth P. Anderson, Major Professor

Date of Defense: October 26, 2022

The thesis of Melissa Lau is approved.

_____

Dean Michael R. Heithaus
College of Arts, Sciences and Education

_____

Andrés G. Gil
Vice President for Research and Economic Development
and Dean of the University Graduate School

Florida International University, 2022

Declaration Statement

I, Melissa Lau, declare that the thesis entitled Utilization of Sense of Place and Photovoice Within Social-Ecological Systems Research is the result of my original research work and it has been written by myself under the supervision of my advisor, Elizabeth Anderson. Reference to the literature, and acknowledgement of collaborative research and discussions are made and appropriate credit has been given within this thesis. I confirm that this work has not been submitted for any other degree qualification.

DEDICATION

To all graduate students who began or continued their journey during the COVID-19 pandemic

And

To my best friend, Misu

ACKNOWLEDGMENTS

I would like to give thanks to my major advisor, Dr. Elizabeth P. Anderson, whose compassion, flexibility, and encouragement helped me through this critical moment in my career. I am eternally grateful to her for providing a space to express my thoughts and ideas; thank you for giving me the opportunity to show you new concepts and methods and for being supportive and receptive throughout the process. I would also like to thank my committee members, Dr. Nelson Varas-Diaz and Dr. Jim Riach, whose unwavering guidance and support helped refine my ideas and allow them to come to fruition. I also wish to express my deep gratitude to the participants of this study who volunteered their time and shared their knowledge with me about places that were or continue to be important to them. I thank current and former post docs in FIU's Tropical Rivers Lab who helped me along the way- Natalia Piland, Erin Abernethy, and Claire Beveridge- and provided support and guidance for this study to succeed. I also wish to extend my thanks to Dr. Jack Vertovec who provided guidance in facilitating my first photovoice workshop. To all the incredible people I met along the way who helped me succeed- Brenna, Aldo, Guido, Nadia, Ana, Mason, Adrian, Lauren, Daniela- thank you for being a solid support system throughout this entire journey. I'm thankful to my family, Martha my mother, and Marcio my brother, for supporting me and encouraging me to pursue my studies. To my best friend, Robin, who became a source of light during the darkest and most difficult time of my life; thank you for listening to me, comforting me, believing in me, and allowing me to be myself around you. Finally, I thank my funding sources: NSF CREST CaChe, the Miami Foundation, and the Department of Earth and Environment

ABSTRACT OF THE THESIS

UTILIZATION OF SENSE OF PLACE AND PHOTOVOICE WITHIN SOCIAL-ECOLOGICAL SYSTEMS RESEARCH

by

Melissa Lau

Florida International University, 2022

Miami, Florida

Professor Elizabeth Anderson, Major Professor

Sense of place has proved to be a useful conceptual and methodological tool to examine social-ecological systems (SES), particularly SES experiencing change. This thesis expands on its utility through two major components. First, I examined research trends of sense of place within SES research over the last 20 years. My results indicated that it is still an emerging concept and future research will continue to expand on its utility. Second, I applied the concept of sense of place to the Miami River, a dynamic SES located in South Florida, USA, that continues to experience rapid urbanization. Specifically, I examined the place meanings that residents ascribed to the Miami River and adjacent neighborhoods. Photovoice was used to elucidate ascribed place meanings. My results yielded two important findings: (1) negative or ambivalent meanings contribute to place connections and (2) photovoice proved to be a valuable research tool examining ascribed place meanings of SES experiencing change.

TABLE OF CONTENTS

LIST OF FIGURES

INTRODUCTION

Before I knew the concept of sense of place, I was always fascinated with humanity's complex relationship with the environment. I delineated the many benefits and services that we derive from nature and in doing so, I also realized how much of an influence we have on it. Often times, human societies are unaware of how impactful their actions are, and we might not realize the gravity of our actions until years or even decades later. A dimension of this relationship that I felt was overlooked was how people intimately and emotionally connect to their environment, especially during an era where our natural environments are undergoing rapid and drastic change. After learning about sense of place and the contexts in which it has been used for within environmental research, it became clear to me that there was an opportunity to use this concept as way to examine people's emotional connections to rapidly changing environments in an effort to understand how they feel and perceive these changes. Using a social-ecological systems (SES) lens, the primary aim of my thesis is to advocate further usage of the concept of sense of place within SES research as this concept aims to understand the emotional relationship between individuals and their surrounding environment.

With this approach, I used the Miami River, an urban river located in Miami, Florida, as a case study to investigate whether individuals living in the communities along the river have an emotional connect to it and if they perceive any changes within their environment that is emotionally impacting them. Identifying these connections could serve as potential indicators for why certain spaces of environments are important to individuals or communities and if these connections lead to place protective behavior.

My first chapter is a systematically literature review on the utilization of sense of place within SES research over the last 20 years. Specifically, I was interested in understanding how the concept has been used to examine SES experience change and how communities respond to these changes. Overall, I found that SES scholars are deciphering and navigating the complex sense of place literature in an effort to apply the concept the best they can given their research goals. Though the result of their research contributes to the ever-expanding literature of sense of place, my results indicated that authors who have investigated sense of place from different vantage points can also unintentionally contribute to the complex literature as well. Additionally, my results also indicated that there was a lack of visual research methods used to examine sense of place within SES experiencing change. Thus, I found this gap in the literature as an opportunity to illustrate the practicality of visual research methods, specifically photovoice, as an innovative tool that provides research participants with a greater role in the research process and allows them to convey a message through a different medium.

For my second chapter, I began implementing the steps of a modified version of photovoice due to the COVID-19 restrictions that were in place at the time. I facilitated my first photovoice workshop and introduced my participants to the method and the intended purpose of the method within the context of the research study. In addition to semi-structured interviews, the photographs that participants took provided an additional layer of reflection for them to articulate the values, concerns, and opinions that they have about the Miami River and their surrounding environment. I found that, despite the rapid changes occurring in the Miami River Corridor, participants were still able to develop or maintain a connection to their rapidly changing environment. Photovoice proved to be a

valuable tool for examining emotional connections in SES experiencing change.

Though COVID-19 presented challenges that affected greater participation in the research process from participants, my thesis served as a pilot study to illustrate the utility of a virtual adaptation of the photovoice method.

CHAPTER 1

FROM HISTORICAL ORIGINS TO CONTEMPORARY USAGE: AN OVERVIEW OF THE CONCEPTUALIZATION OF SENSE OF PLACE AND ITS UTILIZATION IN SOCIAL-ECOLOGICAL SYSTEMS RESEARCH

1.1 ABSTRACT

1. The concept of sense of place has been used to examine the affective, social, and cultural dimensions of people-place relationships. Established within the field of human geography, sense of place is now used within different research contexts including social-ecological systems (SES) research in examining responses to change.
2. To date, however, there lacks a systematically review of how sense of place is utilized within this research area. The literature that informs the theoretical basis of sense of place lacks unification as well. There is a need to demystify the origins of sense of place to understand its current application in SES research.
3. The first section of this review will provide a brief overview of the disciplines that influenced the establishment of sense of place. The second section will systematically review how sense of place is operationalized within SES research over the last 20 years by analyzing a sample of 47 articles from the database Web of Science. Our review will answer three lines of inquiry: (1) What dimension(s) of sense of place are used to examine individuals' or communities' responses to change? How are they examined? Additionally, what authors, or articles, are frequently cited to describe or define the dimension(s) under examination? (2) What is the dominant research methodology used to

examine dimension(s) of sense of place? (3) What is the degree of participation in the research process among participants?

4. Overall, my results revealed that exploratory research was the dominant approach within this research area. More than two-thirds of the articles examined one or several dimension(s) of sense of place, with Richard Stedman being the most frequently cited author to define a dimension of the concept. Qualitative research methods were a frequent method of choice and 80% of the articles indicated that participants only contributed data.

Keywords: Sense of place, social-ecological systems, responses to change, qualitative research

1.2 INTRODUCTION

An inquiry into sense of place requires clarifying what a place is. The term ‘place’ is used synonymously with other terms such as region, site, location, setting, landscape, environment, area, or space. Each term is used differently in everyday discourse. In academia, and within the context of a specific discipline, each term could signify a different analytical concept that can be broken down into separate components and measured quantitatively, described qualitatively, or both (Kruger & Shannon, 2000).

The first attribute, place as ‘location’, refers to where the place is physically located in an absolute or relative sense (through latitudinal or longitudinal marks or measured in distance). The second attribute, place as ‘locale’, characterizes the material things that structure a place such as buildings, roads, rivers, or signposts and what social or cultural significance they hold to inhabitants. The third attribute, one that will be the focus for the entirety of this thesis, is 'sense of place’, which are the ways in which places

are made meaningful through personal experience and social mediations. Hence, the way people construct place (Agnew, 1987).

The concept of place, and sense of place, is a driving theme in the field of human geography (Williams, 2015). Scholars such as Yi-Fu Tuan and Edward Relph wrote extensively on this concept and established it as a new approach for those who are interested in examining the psychological, affective, social, and cultural dimensions of human relationship to places (Williams, 2015; Foote, 2009). Those interested in the subjectivity of place experience and the symbolic role that places play in the human experience extends past human geography and into other disciplines such as anthropology, sociology, urban studies, and more recently, environmental studies (Aucoin, 2017; Erfani, 2022; Williams, 2015; Foote, 2009).

The theoretical background within the sense of place literature that is used to inform the work for these disciplines lacks unification (Jorgensen & Stedman, 2001); yet utilization of the concept has helped advance (Masterson et al., 2017) different research areas of environmental studies. For example, sense of place has been used as an assessment tool for ecosystem management to identify human-valued priority areas for environmental conservation and management (Raymond et al., 2009) and to study the responses to flood risk of coastal communities at the forefront of environmental change (Quinn et al., 2018). One area of research where sense of place can potentially serve as a conceptual and methodological tool is in social-ecological systems (SES) research (Masterson et al., 2017). In a review, Masterson et al. (2017) outlined two areas of enquiry within SES research that sense of place has helped inform: stewardship of ecosystem services and responses to change. Of particular interest to this thesis work is

how sense of place informs responses to SES change. To date, however, there lacks a systematic review of how exactly sense of place is operationalized within this area of research. Specifically, there is a need to demystify the origins of sense of place in order to understand its current application in SES research.

To this end, this first chapter will be separated into two sections. The first section will provide a brief overview of how sense of place developed as a concept, specifically the disciplines that had the greatest influence. The disciplines of interest for this overview are cultural anthropology, landscape anthropology, and human geography. This acknowledgement is important and necessary because there are scholars whose writings helped establish sense of place as a conceptual and methodological tool. Their work has contributed to the concept's interdisciplinary flexibility. After reviewing the disciplines that helped establish the concept, I will turn my attention to how sense of place emerged as a useful conceptual and methodological tool in environmental studies. Specifically, I will be focusing on the utilization of sense of place in social-ecological systems (SES) research. The second section of this chapter systematically reviews and aims to understand how sense of place is operationalized in SES research, and specifically the area of research identified by Masterson et al. (2017): responses to change. My review will answer three lines of inquiry: (1) What dimension(s) of sense of place are used to examine individuals' or communities' responses to change? How are they examined? Additionally, what authors, or articles, are frequently cited to describe or define the dimension(s) under examination? (2) What research methods have been used to examine dimension(s) of sense of place? (3) What is the degree of participation in the research process among participants?

1.3 TRACING THE CONCEPT OF SENSE OF PLACE BACK TO ITS DISCIPLINARY ORIGINS

Before place, there was space. Several scholars had their own definitions and theories on space before turning their attention to place. For example, Cresswell (2008) defined space as a geographical point on earth's surface. Tuan (1977) described space as something that is more 'conceptual' than real, and Massey (1994) critiqued the idea that if place is meaningful, then space is meaningless. The key area of concern for these scholars was how space becomes meaningful to different individuals and groups. In other words, how space *becomes* place. To understand where this interest originated from, we need to go back to the disciplines that helped nurture this curiosity. The following sections will provide further details of how cultural anthropology, landscape anthropology, and human geography helped to establish the concept of place, and ultimately sense of place.

The field of anthropology studies human beings from different vantage points and these approaches can be categorized into two groups: physical anthropology and cultural anthropology. Physical anthropology examines the biological and behavioral aspects of human beings while cultural anthropology attempts to understand the development of human societies along with their social and cultural significance (Mercier, 2019). A keystone feature of cultural anthropology is the concept of culture. Its goal is to make a society's culture understandable to those who have not previously encountered it. For over a century, the abundance and complexity of definitions that have existed for the term 'culture' has grown, yet a simple and complete definition of culture is "the knowledge people use to live their lives and the way in which they do so" (Handwerker, 2002). The

notion of culture reflects that intellectual struggle from scholars who attempt to explain human behavior through pure natural scientific means (Carrithers & Carrithers, 2009).

Cultural anthropologists have implemented different conceptual and methodological tools from the fields of archeology, ethnography, and linguistics to analyze the diversity of cultures that exist in the world (Mercier, 2019). Though they spent a considerable amount of time in the field examining different cultural attributes, landscapes were taken for granted. Until the 1980's, most cultural anthropologists did not treat landscapes as a part of culture but rather viewed them as a physical environment *separate* from culture that governs, or determines, the set of actions, beliefs, and social structures of a culture (Kokot, 2006). To examine landscapes through an anthropological lens, landscape anthropology emerged as a new research direction where anthropologists recognize and investigate the ways in which people's perceptions of their world and their material engagement with it are intimately connected with and shaped by the landscape (Chen, 2017). The conceptualization of "space" and "place" that emerged would later serve a basis for operationalizing sense of place through an anthropological lens.

Landscape anthropology advanced knowledge about the ways in which people endowed cultural meaning on to their surrounding environment (Chen, 2017). Landscape anthropologists approached landscapes from two vantage points: through "place" and "space". Space is recognized as a cultural medium, a channel through which individuals can think and organize themselves to produce spatial practices that are social, aesthetic, political, religious, or economic (Aucoin, 2017; Chen, 2017). An examination of space investigates how it is created artificially to serve a particular purpose (Chen, 2017).

Once embedded with significance, “place is a framed space that is meaningful to a person or group over time” (Thorton, 2008; 10). In other words, it is an agglomeration of lived experiences: conflicts, rituals, memories, stories, affection, and meanings. The agglomeration of lived experiences and cultural meanings help to distinguish it from a generalized space to place (Aucoin, 2017). An analysis of space and place considers the dynamic nature of meaning construction within cultures. On the one hand, an examination of space concerns itself with how space is culturally organized among different social groups (cultures, genders, classes, age, race). On the other hand, an analysis of place examines how it is lived, learned, experienced, conceived, contested, resisted, remembered, or longed for (Aucoin, 2017).

Academically, human geography is the “birthplace of concern for sense of place” (Cighi, 2008). Scholars in this discipline explore the relationship between the environment and the human experience (Haywood, 2014). The rise of the concept of sense of place can be viewed as a critique of the quantitative revolution of the 1950-60’s when human geographers used behavioral and economic approaches to study people’s functional relationships to places (Hay, 1988; Foote, 2009). These approaches, more akin to positivism than empiricism, examined only specific parts of people-place relationships and quantified people’s position in space (Hay, 1988; Foote, 2009). Scholars who utilized these methods sought to maintain scientific rationality, but human geographers were becoming increasingly concerned with individuals’ subjective relationship with their environment; hence emerged studies of “the geography of lived experience” (Hay, 1988; Simpson & Ash, 2020)

Human geographers drew from different ontologies and epistemologies such as existentialism, humanism, and phenomenology to better understand the human experience as it relates to our relationship with places (Hay, 1988). Human geography's engagement with phenomenology during the 1960's influenced a range of research directions in the 1970's and 1980's (Simpson & Ash, 2020). Phenomenology is the philosophical study of the structures of experience and consciousness (Smith, 2018), and its origins are most commonly understood to be in the work of the German philosopher Edmund Husserl (Simpson & Ash, 2020). Husserl introduced this new branch of philosophy that shifted its focus from the abstract metaphysical speculation of lived experiences of individuals to the subjective, descriptive, and qualitative discovery of human phenomenon. Thus, explanations were not to be imposed upon a phenomenon in advance, but rather the phenomenon was to be understood for what it is: an experience (Simpson & Ash, 2020; Husserl, 1970; Seamon, 1982; Seamon, 1987).

Much of the writing from human geographers who took on a phenomenological approach drew from the writings of Martin Heidegger (1971) and Maurice Merleau-Ponty (1962). Heidegger's phenomenological contribution to geographic scholarship has been in his discussion of dwelling, given its concern with how it is that people are at home in the world, have a place, and how sense is made of the act of dwelling (Simpson & Ash, 2020). Merleau-Ponty's writings of phenomenology was focused less on identifying commonalities of experiences and more about allowing the "strangeness" of an experience come through. This shift in focus from the functionality of people-place relationships to the subjective attachments that people develop towards places is evidenced as a clear break from the more quantitative or spatial science approaches that

dominated human geography at the time (Simpson & Ash, 2020). This shift allowed for future research directions of people-place relationships in human geography to unfold such as home, sacred space, and homeland (Ley, 1977; Porteous, 1976); place and placelessness (Relph, 1976); and sense of place (Tuan, 1974a).

Sense of place is a driving theme in modern human geography (Williams, 2015) and the concept critiqued and challenged the spatial analytical approaches that were dominant in human geography during the 1950-60's. (Foote, 2009). On the one hand, sense of place highlighted the importance of examining the perceptual and cognitive dimensions of human decision-making. Research that was conducted during the 1960-70's in the discipline of environmental perception confirmed that people often feel a strong sense of attachment to their environment such as their home, city, region, or nation (Foote, 2009). Human geographers implemented perceptual and cognitive models into their research design thus resulting in important theoretical and applied advancements across human geography. As a result, it pushed human geographers to expand the scope of positivistic methodologies to question and study spatial behavior and relationships (Foote, 2009).

On the other hand, sense of place upheld geography's longstanding humanistic tradition- a concern for human interests and values. Yi-Fu Tuan, an influential writer in the sense of place literature, coined the term topohilia ('love of place') which described the intimate relationship between human beings and their environment (Foote, 2009). He was among the first phenomenological human geographers to inspire a tradition of place-based scholarship. He argued that place encompasses life histories, social processes, and individual and unique experiences that are a part of the human experience (Foote, 2009;

Haywood, 2014). According to him, “what begins as undifferentiated ‘space’ becomes ‘place’ as we come to know it better and endow it with value” (Tuan, 1977, p. 16). Additionally, Edward Relph (1976) also argued that every person experiences a strong connection to the place they were born into (Davenport & Anderson, 2005). Both scholars stressed the ways in which humans develop attachment through their bodies, feelings, and emotions (Convery et al., 2014). Yi-Fu Tuan, Edward Relph, and others helped establish sense of place as a new approach for scholars who are interested in examining the psychological, social, and cultural dimensions of our relationship to places (Williams, 2015; Foote, 2009).

According to Foote (2009), “place is about what it means to people”. The meanings that people develop towards places are expressed through values, obligations, intentions, and commitments and also come in the form of emotional and social connections (Foote, 2009). These intangible aspects indicate the complexity and diversity of people-place relationships, yet scholars attempt to examine these complex relations under the context of the sense of place framework (Erfani, 2022).

Although the concept of sense of place emerged in the 1960’s, it was not regularly represented by scholars until the 1990’s. The term is much more common now (Foote, 2009; Nelson, 2020). For example, sense of place is the topic of studies across a variety of disciplines including sociology, humanities, urban studies, and more recently, ecology and environmental studies and sciences (Erfani, 2022). Many scholars use the term ‘sense of place’ synonymously with other terms such as place attachment, place meaning, place identity, and place dependence (Nelson, 2020). We should note that while these terms share overlapping concepts, they do not investigate the same phenomena (Williams,

2014, p. 76). As a result, the likelihood of coalescing these terms into a single, integrated conceptual framework for others to use in a consistent way is unlikely to happen (Nelson, 2020; Erfani, 2022).

Given this lack of consistency, providing a detailed overview of the historical origin of the concept of sense of place is important and necessary for two reasons. First, history shapes our scientific interests. According to Creath (2010), history is a vital component of science, and particular people and events help shape a specific branch of study. In terms of particular people and events, I acknowledged the disciplines and early scholars whose curiosity and writings helped spurn an approach that engages with the subjectivity our connections to places. I traced the origins of sense of place back to the disciplines of cultural anthropology, landscape anthropology, and human geography where scholars were already examining people-place relationships. Though they largely focused on analyzing these spatial relationships in an objective, quantifiable way, I identified and illustrated the shift from objectivity to subjectivity. The scholars I previously mentioned are not the only ones who contributed to the development of sense of place. A full detailed account of authors who have written about sense of place, in addition to those who may not have published yet helped advance the concept, is beyond the scope of this paper. However, I acknowledge their contributions to the literature.

Secondly, I reiterate the complex and confusing literature that exists for sense of place and the difficulty in upholding consistency when utilizing different terms. Nelson et al. (2020) identified a noticeable problem within the sense of place literature that entails applying sense of place without clarifying what it specifically means. Consequently, scholars use sense of place and other terms interchangeably, which makes it difficult to

provide a definition of sense of place that is applicable to all perspectives (Nelson, 2020; Escobar, 2001). Thus, I define sense of place as "the meanings and attachments to a setting held by an individual or group" (Tuan, 1977) and establish sense of place as an overarching multidimensional concept (*see* Hashemnezhad et al. 2013) comprised of several inter-related sub-dimensions such as place attachment, place identity, place dependence, and place meanings.

1.4 CONTEMPORARY USAGE OF SENSE OF PLACE IN ENVIRONMENTAL STUDIES

In this section, I will provide a brief overview of how sense of place has been operationalized in the field of environmental studies. I will begin by illustrating a shift from resource-based management to ecosystem management and highlight how sense of place proved useful in including people and their values in management plans along with the concept's eventual integration into the ecosystem services framework. Afterwards, I introduce the concept of social-ecological systems (SES) and contributions that sense of place has made in advancing knowledge in the social-ecological systems research domain. Next, I highlight three research needs outlined by several scholars (Masterson et al., 2017; Masterson et al., 2018; Haywood, 2014) in both the SES and sense of place literature that, if met, could further advance the compatibility and utility of the two concepts. Lastly, based on these research needs, I systematically reviewed a sample of 47 articles to examine how sense of place is being utilized in SES research thus far.

I performed a search on the web database Web of Science (WoS) focusing on the core collection using the search term "sense of place" and "ecosystem" to find the earliest account of the concept's utilization into ecosystem management. Document types that

were accepted were articles, proceeding papers, editorial materials, book chapters, and reviews. My search had returned 195 documents. The earliest date range provided by WoS in association with our search term was from April 1998 and it returned an article titled “Spiritual values: can they be incorporated into forest management and planning?” co-authored by Laura M. Fredrickson and William Kerr. I used the references cited in this article as a baseline to create a timeline of the progressive incorporation of sense of place into ecosystem management.

1.4.1 TRADITIONAL RESOURCE MANAGEMENT TO ECOSYSTEM MANAGEMENT

Up until the mid-1980’s, public land management agencies in the United States prioritized commodity production and economic efficiency (Williams & Patterson, 1996) in previous planning efforts rather than the values and meanings that people derive from the surrounding environment (Fredrickson, 1998). During the late 1980’s, planning efforts were more akin to ecosystem classification systems and spatial analysis tools such as geographical information systems (GIS). Although these tools proved useful in some regards, they mainly helped to set parameters or served as indicators for specific assessment goals and did not address values or meanings (Fredrickson, 1998).

The shift from a resource-based management approach, which emphasized commodity production and economic efficiency, to an ecosystem approach occurred during the early 1990’s and reflects the rising interest of natural resource managers to include people and their values in management plans (Williams & Patterson, 1996). Ecosystem management—“people doing something bounded in space” (Gordon, 1993)—contrasts from resource-based management in three ways: First, priority is given to the

health of the environment and its ecosystem processes that support and sustain species, communities, and the ecosystem itself. Second, the probability of successfully managing an ecosystem depends on the ecological factors that ecosystem managers focus on as opposed to the heavy investments of labor and material. Lastly, the interplay between social values, economic growth, and ecological factors must evolve with understanding (Sampson & Knopf, 1996).

A main feature of the ecosystem approach that made it so appealing to resource managers (Quigley et al., 1997) was its ability to "substantiate the emotional and symbolic meanings that people have of natural resources on [United States] public lands" (Galliano & Loeffler, 1995). Developing an ecosystem management plan requires ecosystem managers to assess the human values and demands of ecosystem products. Past ecosystem assessments have identified the values and demands of ecosystem products using public attitude surveys (Quigley et al., 1997). The information acquired from these surveys is valuable because it allows ecosystem managers to identify the types of management plans that are most acceptable, contentious, or confusing and it also provides a greater understanding about why the public feels the way they do (USDA, 1996). However, the data acquired from these surveys are reduced to a single attribute, being that of an attitude, value, or belief, and the quality and richness of these meanings are diminished (Stewart & Williams, 1998).

The emergence of sense of place signified its potential to bridge the gap between the science of ecosystems and their management (Stewart & Williams, 1998). Though the concept has been a topic of theoretical debate in other disciplines, as previously discussed, the term appeared in a number of academic articles and government reports

during the early 1990's (Stewart & Williams, 1998; Williams & Patterson, 1996; Kaltenborne, 1998; USDA; 1996; Quigley et al., 1997). Sense of place is a value that was not considered uniformly in previous ecosystem assessment reports (Quigley et al., 1997; USDA; 1996). What amplified interest in the concept by researchers and practitioners was its ability to capture the rich variety of human relationships to ecosystems, resources, and landscapes (Stewart & Williams, 1998).

According to William and Patterson (1996), what a biologist or ecologist calls "ecosystem" coincides with what a geographer calls "place". As previously mentioned, "what begins as undifferentiated 'space' becomes 'place' as we come to know it better and endow it with value" (Tuan, 1977, p. 16). The same can be said about ecosystems. Ecosystems can be thought of as socially constructed places because they stand at the intersection of natural forces, social and economic relations, and sociocultural meanings (Williams & Patterson, 1996). Humans do not attribute meaning to ecosystems and their resources based on their physical or chemical properties; on the contrary, they attribute meanings to these resources based on the context and circumstances that they are situated in (Kaltenborne, 1998). Since humans associate and interact with ecosystems in a similar fashion to places, they are able to form long-term bonds of attachments to them. Understanding and applying the concept of place in ecosystem management allows resource and land managers to more actively inventory and understand meanings that people attach to the lands and resources within their respective management area (Quigely et al., 2017).

Incorporating sense of place into ecosystem management continued with its integration into the ecosystem services framework. Sense of place is categorized as a

cultural ecosystem service in the *Millennium Ecosystem Assessment Report* (MA) (2005). Acknowledging sense of place as a cultural ecosystem service recognizes its contribution to society (MA, 2005). The integration of sense of place within this framework has two possible explanations. First, scholars recognized the inseparability of ecosystems and people. Managing ecosystems requires understanding how people use, perceive, and value ecosystems. Second, the recognition that people perceive places and express a level of belonging can affect the degree of conflict where there are contentious issues surrounding resource use and values (Ryfield, 2019).

In addition to other cultural ecosystem services, the MA defined sense of place as a "nonmaterial benefit of an ecosystem" that people value through associations with "recognized features of their environment, including aspects of an ecosystem" (MA, 2005). A similar report initiated by the German government and in collaboration with the European Commission, *The Economics of Ecosystems and Biodiversity* (TEEB), also included sense of place in its study of biodiversity loss. Authors of TEEB separate cultural ecosystem services into four groups, one of which is 'spiritual experiences and sense of place'. This group posited that "nature is a common element of all major religions; natural landscapes also form local identity and sense of belonging" (TEEB, 2010). Additionally, the *Inter-Governmental Science-Policy Platform on Biodiversity and Ecosystem Services* (IPBES) is a framework recently developed to improve the application of the ecosystem services approach for international policy use (IPBES; https://ipbes.net/). The IPBES highlighted three elements of the interaction between human societies and the non- human world: Nature, Nature's Contribution to People, and Quality of Life (IPBES; https://ipbes.net/). The authors identified sense of place as an

attribute of Quality of Life that is derived from Nature's Contributions to People (IPBES; https://ipbes.net/values-contrast-ipbes-framework). However, the IPBES falls short of providing a definition for sense of place and lacks details on how it is developed or how it can be applied within an ecosystem services framework.

The MA, TEEB, and IPBES are examples of frameworks that evaluate trends and interlinkages of ecosystems services at an international scale. However, different countries and governments develop their own frameworks to assess ecosystem services (Moutouama et al., 2019; Watson et al., 2011). Ryfield et al. (2019) highlighted frameworks such as the National Ecosystem Service Classification System (NESCS) and the Common International Classification of Ecosystem Services (CICES) do not reference sense of place as cultural ecosystem service. Both frameworks aim to be as comprehensive as possible to ensure consistency when operationalizing the ecosystem services framework; however, the absence of sense of place as it relates to the importance of ecosystems and how humans value it and its resources is a significant omission. (Ryfield et al., 2019).

Effective environmental management strategies must consider the interplay between social, economic, and ecological systems (Salomon, 2008). The concept of coupled social-ecological systems (SES) is a growing area of research in environmental studies, social science, and ecosystem management (Salomon, 2008). According to the Russian microbiologist B.L. Cherkasskii, a social-ecological system is a system that "consist[s] of two interacting subsystems: the biological (epidemiological ecosystem) and the social (social and economic conditions of life of the society) subsystems where the biological subsystem plays a role of the governed object and the social acts as the internal

regulator of the interactions" (Cherkasskii, 1998, p. 321). In other words, SES are systems in which "people rely upon functioning ecosystems and functioning ecosystems are influenced by human values, decisions, and behaviors" (Chapin et al., 2010).

Human actions are having widespread and irreversible effects on the environment, including ecosystems (Haberl et al., 2007; Foley et al., 2005), and we are increasingly confronted with the implications of these accelerating changes (Marshall et al., 2019) to SES. Masterson et al., (2017) outlined a user-friendly approach for researchers who wish to utilize sense of place in SES research. Two areas of research where sense of place has contributed in are stewardship of ecosystem services and responses to change (Masterson et al., 2017). Of particular interest to this thesis is how sense of place informs responses to SES change. Responses to change in SES focuses on the capability of individuals, communities, and institutions to respond and adapt to change (Masterson et al., 2017). Operationalizing sense of place in this research area allows researchers to examine the cognitive-emotional factors that determine how different individuals or groups respond to SES change (Adger et al., 2009; Adger et al., 2013; Clayton et al., 2015).

Researchers must turn their attention to what people are attached to in order to understand how cognitions and emotions affect responses to change. Specifically, to what degree does the change begin to affect our connection to a place? Devin-Wright & Howes (2010) suggest that the interpretation of the change can be an indicator for measuring the impact on an individual's connection to a place rather than the actual change itself. For example, communities that share and express a strong sense of place may support or adapt to changes by promoting conservation and pro-environmental behaviors as a system transition towards sustainability (Chapin et al., 2012; Masterson et al., 2017).

However, not all individuals or groups share the same sense of place (Rajala et al., 2019). Sense of place can also serve as a root of conflict and present itself as a barrier for transformative change (*see* Devin-Wright & Howes, 2010; Masterson et al., 2017; Rajala et al., 2019). The meanings and attachments that individuals and communities attribute to their surrounding environment may guide preferences for and shape responses to social and ecological change (Marshall et al., 2019).

1.4.2 RESEARCH NEEDS TO ELICIT RESPONSES TO SOCIAL-ECOLOGICAL SYSTEMS CHANGE USING SENSE OF PLACE

Sense of place is an underutilized concept despite its great potential to inform SES research (Masterson et al., 2017). I have synthesized three research needs that two scholars (Vanessa Masterson and Benjamin K. Haywood) have suggested to further improve its capacity as a vehicle for communication that elicits responses to SES change and preserves subjectivity: (1) an increase in the utilization of place meanings, (2) greater participation through the research process, and (3) the potential of photovoice as a scoping tool to contribute to SES research.

Place-based concepts are considered to be a potential tool that helps to unpack and engage with contested visions of sustainability (Yung et al., 2003; Chapin & Knapp, 2015). Earlier, I established sense of place as an overarching concept and defined it as the "meanings and attachments to a setting held by an individual or group" (Tuan, 1977). I note that this definition highlights both meanings and attachments. However, these two terms are often used interchangeably, and greater analytical emphasis has been directed towards place attachment than to place meanings (Stedman, 2008; Stedman, 2016). Assessing the strength of an attachment is not enough to understand attitudes and

behaviors. Thus, place meanings play an important role in understanding attachment (Stedman, 2003; Masterson et al., 2017). Place meanings are descriptive statements about why an individual or group attributes such a meaning to a place, as these symbolic meanings trigger the development of attachment (Jacquet & Stedman, 2013; Stedman et al., 2004; Manzo, 2005). Previous research that examines place meanings has tended to focus on the positive place meanings that individuals ascribe to places. As a result, much is not known about how negative and ambivalent place meanings contribute to the development of attachment (Manzo, 2005). Place meanings are derived through experiences in a place (Tuan, 1977). The meanings derived from these place experiences are actually socially constructed through certain rules that are meant to guide experience and behavior (Sack, 1992).

I reiterate that social-ecological systems, similar to ecosystems and places, stand at the intersection of natural forces, social and economic relations, and sociocultural meanings (Williams, 1995; Williams & Patterson, 1996). Therefore, the inter play of these three forces establishes the rules that manage a place (Freudenburg et al., 1995) or in this case, a social-ecological system, and these rules are reconstructed over time through social and political process that help foster meanings (Cheng at al., 2003). The argument to increase our engagement with place meanings is to broadly capture the symbolism of meanings that are attributed to SES and understanding the multiplicity of meanings that are derived from these people-place interactions (Masterson et al., 2017b)

Natural science communities have often relied upon ordinary citizens to collect information for specific research goals (Dickinson & Bonney, 2012; Dickinson et al., 2010). As SES research grows in complexity and scale, there is an increasing need to

recognize community members as a valuable asset in collecting, submitting, and analyzing data over large and temporal scales (Conrad & Hilchey, 2011; Cooper et al. 2007; Dickinson et al., 2010). Public participation in scientific research (PPSR) is an integrated umbrella term comprised of participatory research traditions and methods that advocate for collaborative efforts between researchers and communities (Haywood, 2013). PPSR efforts focus on a range of issues, including how people relate to their environment (Campbell & Vainio-Mattila, 2003). Haywood (2013) argues that a focus on sense of place, and specifically place meanings, has the potential to contribute a nuanced understanding of how people who participate in scientific research connect with their surroundings and negotiate environmental values and attitudes.

The dynamic nature of SES also presents a crucial need to identify the array of changes that communities experience, as it highlights the issues or concerns that individuals perceive as the most significant or important to address (Bennett & Dearden, 2013). The call for participatory methods that facilitates the expression of opinions, knowledge, and experiences of different communities is urgently needed (Masterson et al., 2018). Given the variety of visual methods that exist, we make the case for using photovoice as a participatory research method for understanding complex social-ecological connections: specifically, how individuals experience social and environmental change in relation to their emotional attachment to a place.

Photovoice is a community based participatory research (CBPR) method that combines photography and social action to empower communities to: (1) document community strengths and concerns; (2) promote dialogue and shared knowledge about community and personal issues; and (3) reach policy makers (Wang, 1999). Photovoice

uses images taken by community members to understand multiple perspectives and to encourage ownership of the research process and outcomes (Castleden et al., 2008). Beginning in the field of public health, photovoice has branched out to other fields such as anthropology, sociology, ethnography, and, more recently, environmental research (Baldwin & Chandler, 2010, Gubrium & Harper, 2009; Harper, 2009; Masterson et al., 2018; Moya et al. 2017; Oliffe et al., 2008; Vitous & Zarger, 2020).

For example, with the help of local community members, Baldwin & Chandler (2010) used photovoice to explore the threats and impacts of climate change off the coastal community of Noosa, Australia. Additionally, Masterson et al. (2018) used the method to understand how individuals and groups experience ecosystem change in connection to their well-being in two separate villages in Kenya and South Africa and Vitous & Zarger (2020) used it to shed light on how residents living off the coast of Placenia, Belize experience uneven and rapid large-scale tourism development in their communities. In each of these cases, photovoice was used to explore community issues, promote dialogue between different community members or stakeholders, and potentially influence decision making. More importantly, the incorporation of this visual research method allowed for a shift in the power dynamics between the researchers and participants and it provided participants with a stronger role in the research process.

Up to this point, I have provided an overview of the conceptualization of sense of place, focusing on the three disciplines that helped develop the concept. Additionally, I illustrated the emergence and utility of sense of place in environmental studies, starting with its utility in ecosystem management and later into the SES research domain. I also highlighted three research needs that were identified by Masterson, Haywood, and other

scholars that could possibly help advance knowledge in both the SES and sense of place literature. The research needs that I have identified highlight the theoretical insights and practical contributions that can further enrich and inform SES research as it relates to responses to change. These research needs do not necessarily have to be met simultaneously; however, it is unclear whether these needs are being considered at all.

To this end, I will conduct a systematic review within the SES literature to understand how sense of place is operationalized in this research domain, given the research needs that were previously mentioned. Specifically, the area of research that I will be focusing on is responses to change, as outlined by Masterson et al. (2017). Through a systematic literature review, I pursued three lines of inquiry: (1) What dimension(s) of sense of place are used to examine individuals' or communities' responses to change? How are they examined? Additionally, what authors, or articles, are frequently cited to describe or define the dimension(s) under examination? (2) What research methods have been used to examine dimension(s) of sense of place? (3) What is the degree of participation in the research process among participants?

1.5 METHODS

1.5.1 DATA COLLECTION

I established three sets of criterions before performing a web search for documents. The first criteria I established is for the concept of sense of place. I previously established sense of place as an overarching term and defined it as "the meanings and attachments to a setting held by an individual or group" (Tuan, 1977). I also recognized all other place-based concepts such as place attachment, place identity, place dependence, and place meanings as interrelated dimensions of sense of place and

accepted them within our search. I also accepted frameworks developed by researchers that combine one or more dimensions together to examine the emotional connections to places.

The second set of criteria I established are for the study sites under examination for the articles selected. Here, I classified the study sites as SES or not. To determine this, I used this definition by Chapin et al. (2010) to describe a SES: "people rely upon functioning ecosystems and functioning ecosystems are influenced by human values, decisions, and behaviors". I felt that this was the simplest definition to describe a social-ecological system. Additionally, I used the list of ecosystem services and indirect/direct drivers of change as outlined by the Millennium Ecosystem Assessment (2005) to identify the ways that communities rely upon functioning ecosystems to survive and the ways in which humans directly or indirectly influence ecosystems (see *Millennium Ecosystem Assessment,* 2005).

The third set of criteria that I reviewed was the type of participation that took place for each study for the articles selected. According to Shirk et al. (2012), collaborative endeavors between scientists and the public is growing. Accordingly, the terms used to describe this type of engagement are growing as well (Shirk et al., 2012). For example, researchers have utilized citizen science to assist them in large-scale data collection projects in the fields of ecology and conservation (Bhattacharjee, 2005; Bonney et al., 2009b). In a social science context, and specifically in the field of community psychology, participatory action research is a process in which researchers and participants work together to develop goals and methods, gather, and analyze data, and implement the results in a way that will promote change (Reason, 1994).

Terms like community science (Carr, 2004), participatory research (Cornwall & Jewkes, (1995), and public participation (Dietz, 2013) also share similar elements to the terms mentioned above. To acknowledge the diversity of distinct terms sharing similar elements of participation in research, Shirk et al. (2012) developed the "Five Project Model". This model acknowledges the convergence of thinking among scholars working across different fields who research and practice engagement with the public for research. It specifically elaborates the five different degrees to which the public participates in scientific research: Contractual, Contributary, Collaborative, Co-Created, and Collegial. The model outlined by Shirk et al. (2012) was used as a guide to aid in classifying and assessing which aspects of the public were involved in for the selected papers (*see* Shirk et al., 2012).

After establishing these set of criteria, I performed a search on the web database Web of Science (WoS) focusing on the core collection using the search term "sense of place". The earliest date range provided by WoS in association with our search term was from January 1986. Thus, the time period considered for our search ranged from January 1986 to November 2021. Document types that were accepted were articles, proceeding papers, editorial materials, book chapters, and reviews. Our search had returned 2,874 documents by the latest search date November 25, 2021. During a second round of classification, a review of those abstract and titles that did not have "sense of place" as the primary study subject were eliminated, leaving us with 325 documents for our analysis. I examined the remaining set of documents by further classifying the study site under examination as a social-ecological system, as per the definition by Chapin et al. (2010) and assessing the interaction between human communities and the social-

ecological system itself using the list of ecosystem services and indirect/direct drivers of change (*see* MA, 2005). Those that did not meet the SES criteria were eliminated, leaving us with 47 documents for further analysis.

1.5.2 DATA ANALYZATION

Additional components of the 47 articles considered part of our final dataset were extracted for analysis of the three research questions. To answer the first question, "what dimension(s) of sense of place are used to examine individuals' or communities' responses to change? How are they examined?", I classified the research purpose of the sample of articles into two categories: exploratory or explanatory research. I examined the abstract and introduction of the articles to identify the research purpose of an article. I looked for words such as "identify", "examine", or "understand" and used in vivo coding to code these words as they appeared throughout the text. In vivo coding is a coding technique in which codes are generated from a word or short phrase from the actual language found in the qualitative data (Strauss, 1987, p.33). I categorized the article under exploratory or explanatory research based on the in vivo codes generated and what the article hoped to accomplish with their research. I also examined the sample of articles further to identify the dimension(s) of sense of place is under examination. The goal of this analyzation is two-fold: it will reveal what dimension(s) of sense of place are the most widely investigated within this research area and it will also reveal whose work or the authors most cited to define the dimension(s).

For the second question, "what research methods have been used to examine dimension(s) of sense of place?", I classified the methods that the sample of articles used under the method that exist in scientific research: quantitative, qualitative, or mixed

methods. After classifying the articles into the appropriate research method category, I examined the articles further to identify the specific method used to extract their data (i.e.: mail in/online questionnaires, semi-structured interviews, focus groups, GIS tools, etc.). Lastly, to answer the third question, "what is the degree of participation in the research process among participants?", I used the "Five Project Model" by Shirk et al. (2010) to assess the degree of participation. I note that this portion of the analysis is largely dependent on how much information the articles provide. Depending on the information that the articles provided, we determined what PPSR model the article classified under based off the aspects of the research process that involved participants.

Table 1-1: Dominant Research Approaches for the Dimension(s) of Sense of Place in Social-Ecological Systems Change Research.

Exploratory				Explanatory			
In Vivo Code	Frequency	Relative Frequency	Cumulative Percentage	In Vivo Code	Frequency	Relative Frequency	Cumulative Percentage
"Examine"	18	37.5	37.5	"Address"	1	5.9	5.9
"Explore"	16	33.3	70.8	"Elicit"	2	11.8	17.7
"Understand**"**	8	16.7	87.5	"Elucidate"	3	17.6	35.3
"Investigate"	5	10.4	97.9	"Evaluate"	2	11.8	47.1
"Uncover"	1	2.1	100	"Identify"	2	11.8	58.9
				"Propose"	1	5.9	64.8
				"Report"	2	11.8	76.6
				"Represent"	2	11.7	88.3
				"Test"	2	11.7	100
Total	48	100		Total	17	100	

Note: Results in this table show the number of times that a word was coded to describe the purpose of the research study. Some of the articles in the sample contained overlapping purposes and could fit in both categories.

1.6 RESULTS

My results revealed that exploratory research was the dominant research approach for the sample of articles selected. Terms such as "examine" and "explore" were coded

the most frequently among other terms within the sample of articles, accounting for 37.5% and 33.3% of all terms, respectively (*see* Table 1-1). This result suggests that scholars in the SES literature are still learning how to utilize the concept as it relates to changing SES. Interestingly, more articles reported explanatory research than exploratory research, though each code was counted less than three times.

I previously established sense of place as an overarching concept and defined it as "the meanings and attachments to a setting held by an individual or group" (Tuan, 1977). I posited that sense of place encompassed interrelated dimensions such as place attachment, place identity, place dependence, and place meaning. In my analysis, I found that several different dimensions of sense of place were being examined in SES research, including the overarching concept of sense of place itself. My examination showed that 11 papers examined a general sense of place among participants in several different contexts. For example, Strauser et al. (2018) described sense of place in this manner:

"Extending Tuan's (1974) thesis of humans as having emotional bonds to environments in their daily lives, particularly of home and culture, Cronon (1992) indicated places are valued through the stories told about them."

Klein et al., (2021) described sense of place in a similar fashion:

"The theoretical basis for the importance of understanding how people construct meaning and relationships is robust (Tuan, 1977; Jackson, 1984; Spirn, 1998; Meinig, 1979; Treib, 1995)".

A commonality among this set of papers illustrates that a general sense of place can be examined without explicitly specifying the dimension(s) of sense of place under question. However, I should note that a few papers within this set of articles that examined a general sense of place did not use the term 'sense of place' to describe people-place relationships. For example, Wheeler et al., (2016) used the term 'place-based inquiry' to explore how it fosters meaningful participation in planning efforts. Similarly, Kruger & Shannon (2000) used the concept of place to explore shared concerns of those living in the White Pass community to assess community values and concerns. Only one paper within our sample (Llano et al., 2021) did not provide a definition or description of sense of place.

The remaining 36 papers focused one or several concepts and investigated the association between the concepts to further understand how changing SES impacts these constructs. Ten papers focused exclusively on place meaning and ten papers focused exclusively on place attachment. It is interesting to see that there was an equal amount of interest on these two dimensions. Six papers focused on the relationship between place meaning and place attachment. Though the frequency in which the articles that focused on the association between the two is small, it illustrates the interest among scholars about the dynamic nature of the relationship between place attachment and place meaning.

Lastly, 13 papers focused on all or some dimensions of sense of place. I posited that sense of place encompasses multiple dimensions such as place attachment, place identity, place dependence, and place meaning. My results revealed a variety of ways to study all or several dimensions of sense of place and additional place-based constructs

not previously discussed within the scope of this thesis, describing the association between place attachment, place identity, and place memory (Khakzah & Griffith, 2016); place meaning, place attachment, and the place-making process (Toomey et al., 2021); place identity and place dependence (Ignatiadis et al., 2020); or all four constructs together (Eanes et al., 2018; Perez-Ramirez et al., 2019; Verbrugge et al., 2019; Lowery & Morse, 2013).

My examination of the literature on sense of place and responses to SES change showed that the number of authors whose work is cited in the sample of articles are many. They date back as early as Tuan (1974) to the most recent work by Masterson et al. (2019). For this part of the analysis, I specifically focused on the authors who are most frequently cited to define or describe sense of place and its dimensions. The top four most cited authors are Richard Stedman (counted 26 times), Yi-Fu Tuan (counted 21 times), and Setha Low & Irwin Altman (counted 11 times).

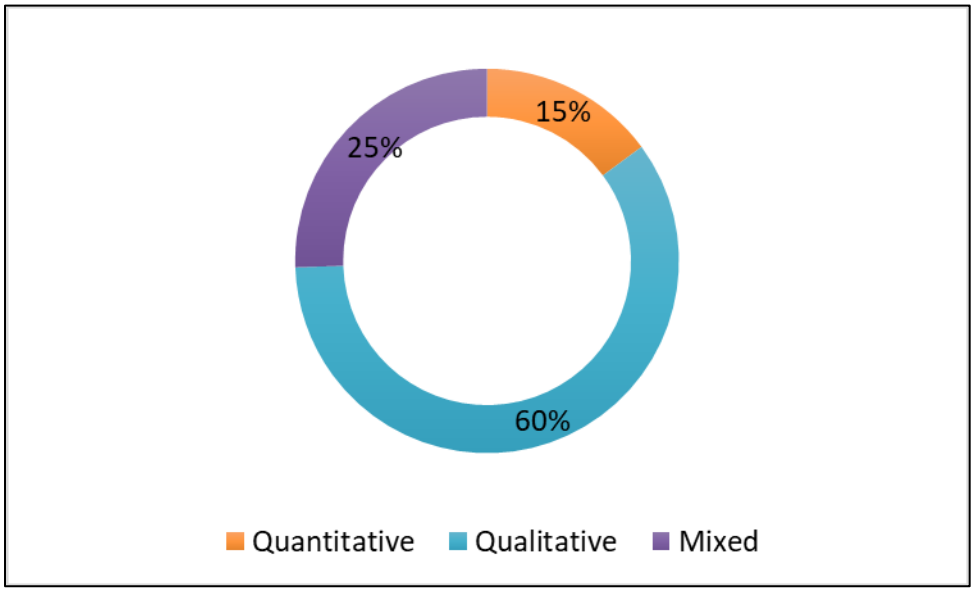
Richard Stedman is the most frequently cited author within our review. Articles that he has published as a stand-alone author or co-author span across over a decade with Stedman (2003) receiving the most counts (26). The overall high count suggests that Stedman has contributed much theory to sense of place, specifically place attachment and place meaning (Jacquet & Stedman, 2013; Jorgensen & Stedman, 2001; Masterson et al., 2019; Masterson et al., 2017; Stedman, 1999; Stedman, 2002; Stedman, 2003; Stedman, 2008; Stedman, 2016; Stedman et al., 2004). Yi-Fu Tuan received the second highest count with his most cited article Tuan (1977) appearing 16 times. Tuan was among the first phenomenological human geographers to inspire a tradition of place-based scholarship and his main focus was on the meanings that individuals develop towards

places. Lastly, Low & Altman (1992) was the third most cited authors with their seminal work on place attachment appearing 11 times. Interestingly, my analysis revealed that several authors used sense of place and place attachment interchangeably, often citing Low & Altman (1992) to describe or define sense of place.

In addition to the most cited authors, I also counted the number of times other authors were cited in the sample of articles. A total of 48 (stand alone or collaborative) authors were cited to define dimension(s) of sense of place. With the exception of Masterson et al. (2017; 2019), Relph (1976), and Scannell & Gifford (2010) that were counted 7, 5, and 3 times, respectively, the remaining 45 authors and their work were cited less than three times.

Research within sense of place and responses to SES change is divided into three different methodological traditions: qualitative, quantitative, and mixed methods. My analysis revealed that 60% of the sample of articles used qualitative methodologies to extract information from participants (see Figure 1-1). Additionally, 25% used a mixed methods approach and 15% used a quantitative approach. My findings suggest that researchers often combine one qualitative method with another, and even combining those with quantitative methods, in an attempt to fully capture and elucidate the meanings and attachments that individuals hold to places.

Figure 1-1. Most Frequently Used Research Methods



Given that qualitative methods was the dominant research method used within the sample of articles, I dissected this finding even further to identify the different kinds of qualitative methods used to capture the rich and nuanced descriptions of sense of place. The qualitative methods that were utilized in the sample of articles will be split into two separate categories: traditional qualitative research methods and visual research methods. Additionally, I counted the number of times that the method was used within the sample of articles.

Figure 1-2. Frequently Used Traditional Qualitative Research Methods Examining Sense of Place in Social Ecological Systems Research

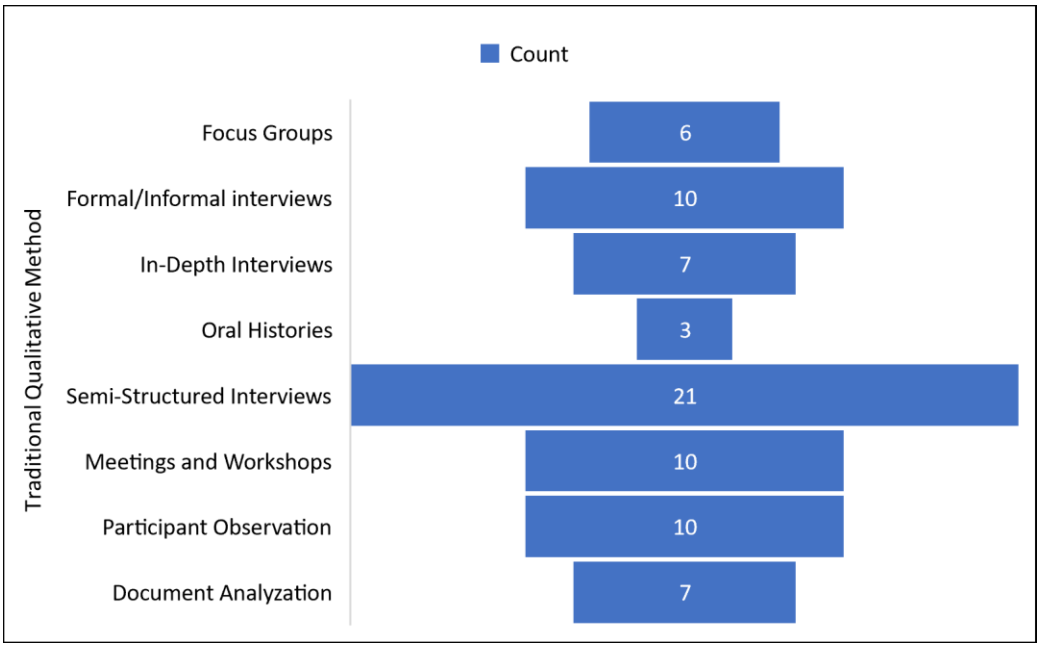
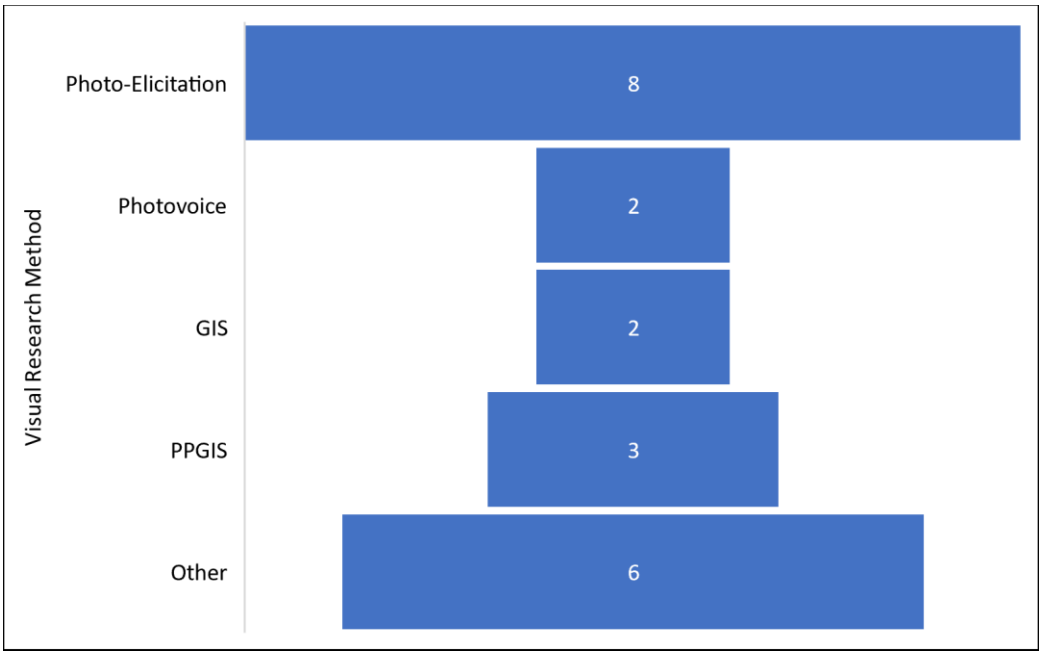


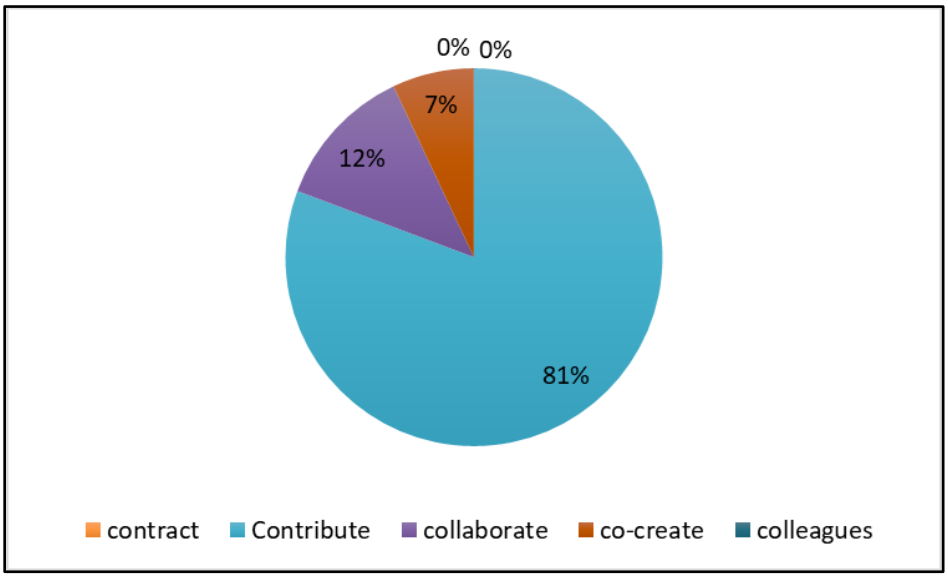
Figure 1-3. Frequently Used Visual Research Methods Examining Sense of Place in Social-Ecological Systems Research



Traditional qualitative research methods were the most commonly used method within the sample of articles with semi-structured interviews being the most common method of choice (see Figure 1-2). Visual methods comprised about 22% of all qualitative research methods (see Figure 1-3). Photo-elicitation, a visual research method that involves inserting a photograph into a research interview (Harper, 2002) and modified versions of this method, such as resident-employed or visitor-employed photo elicitation, was the most frequently used visual research method in this category. Only two papers within the sample of articles utilized photovoice as a part of their research process.

My examination of the literature examining sense of place and responses to SES change sought to assess the degree of participation among participants for the sample of articles selected. Our results indicated that 80% of the articles selected fall under the contributory model outlined by Shirk et al. 2012 (see Figure 1-4). The other models, collaborate and co-create, accounted for 12% and 7% of PPSR models, respectively. No articles fell under the contractual or collegial model.

Figure 1-4. Degree of Participation by Percentage



1.7 DISCUSSION AND RECOMMENDATION FOR FUTURE RESEARCH

Within this chapter, we set out to characterize the ways in which the dimension(s) of sense of place are utilized within the SES domain, specifically responses to SES change. To do this, we dissected this research domain in two ways.

The first analysis of the 47 sampled articles clarifies the research approach that scholars take when applying this concept to their research. In other words, does their research take an exploratory approach or an explanatory approach? Within this analysis, I also identified what dimension(s) of sense of place are commonly investigated and the authors that are most frequently cited to describe or define the dimension(s) under examination. In the second analysis, I identified the research methods that were used to measure dimension(s) of sense of place. I also assessed the degree of participation among participants through the research process. Each analysis revealed several discrepancies that are worth discussing. I will provide recommendations for future research after each discussion.

In my first analysis, a majority of the articles that were selected for the review used an exploratory approach to examine the association between responses to change and dimension(s) of sense of place. I suggest a possible explanation. Although sense of place has been around for over half a decade, the concept's application in environmental research is still relatively new. In the process of building the background information of our literature review, I encountered perhaps the earliest account of the application of sense of place in the environmental research. Stewart & Williams (1998) described the concept of sense of place and identified the possible contributions of the concept in the

area of ecosystem management. Since the article's publication, interest in sense of place in this research domain began to slowly increase. The focus of research has now shifted to understanding the links between ecosystems and social and economic forces within a given area. Sense of place is gaining traction in ecosystem management; however, Jones et al. (2016) argues that these "meanings and values have been relatively neglected and untheorized in SES research". The production of more exploratory research within this research area, and within SES research in general, reflects the growing interest of scholars who are in pursuit of discovering the kinds of deeper, intangible values that guide or constrain human action (Adger et al., 2009).

I have emphasized throughout this chapter that the sense of place literature is incredibly complex, confusing, and messy. My results support what other scholars have described about the literature (Masterson et al., 2017; Jorgensen & Stedman, 2001; Hidalgo & Hernandez, 2001; Nelson et al., 2020; Erfani, 2022). In the midst of this complexity, I attempted to clarify the dimension(s) of sense of place under examination within the SES change research area. My findings indicated two distinct ways of examining sense of place: the first entails examining a 'general' sense of place; the second is comprised of one or several dimension(s) of sense of place and examining the association between them.

The latter requires scholars to consider what dimension(s) of sense of place they are interested in understanding along with what factors to consider that could affect the person-place bond such as location, demographics, or the type of environment (Nelson et al. 2020). My findings illustrate that over two-thirds of the articles selected for our review took this latter approach and applied it to their research. Surprisingly, my results revealed

that there was an equal amount of interest among scholars in regard to place attachment and place meaning. Previous scholars have argued that more weight has been given to place attachment than place meaning (Stedman, 2008; Stedman, 2016; Masterson et al., 2017; Nelson et al., 2020). This finding suggests that scholars are recognizing the contribution of these descriptive statements in understanding what intimately connects people to places and are gaining use in this area of research.

Additionally, while place meanings will not always be the sole focus of a research project, it is reassuring to see that scholars are considering the relationship between place meanings and other dimension(s) of sense of place, particularly that of place attachment. One possible explanation for interest in the relationship between the two could be that scholars interested in this relationship often seek to understand how the cognitive and descriptive representations of place (place meaning) are associated with the emotional and evaluative representations of place (place attachment) and its implications on human well-being in SES (Poe, Donatuto, & Satterfield 2016; Stedman, 1999). As Stedman (2004) argues, "we are the ones who attribute meaning to a place, and this is how attachment develops".

While over a third of the papers within the sample specify what dimension(s) they were interested in studying, there were still a number of articles that examined a 'general' sense of place within the context of their research. Investigating a general sense of place does not invalidate the merit of the results; however, providing a broad definition of sense of place without clarifying what it entails can become problematic for two reasons. First, many definitions exist to describe sense of place. A similar review by Nelson et al. (2020) noted that sense of place is a difficult concept to isolate because there is a

noticeable difficulty in determining what specifically makes up sense of place. In agreement with what Nelson et al. (2020) posited in their work, I reiterate that sense of place is a multidimensional concept. Thus, scholars who unintentionally misuse the description of another dimension or provide a broad/vague description of sense of place run the risk of creating more confusion within the literature.

Additionally, scholars who do specify the dimension(s) of interest within their research can encounter a similar issue as well. Within this area, I illustrated the array of authors that have been cited to describe dimension(s) of sense of place. I do not wish to assert that there is one absolute and correct way to define sense of place and its dimensions. On the contrary, scholars who undertake this type of research will encounter a labyrinth of definitions that can become overwhelming to decipher, just as I encountered it myself. Many of these authors are cited together to describe sense of place and its dimensions, though I should note that the array of definitions from authors who have investigated sense of place from different vantage points can also unintentionally contribute to the messy literature.

To this end, I recommend that scholars interested in operationalizing sense of place into their research design clarify what sense of place is. Several review articles do an excellent job at disentangling the myriad of definitions and concepts that exist to describe or define sense of place (see Jorgensen & Stedman, 2001; Scannell & Gifford, 2010b; Lewicka, 2011; Nelson et al., 2020; Stedman, 2002; Erfani, 2022). I agree with Nelson et al. (2020) and assert that it is important to consider what dimension(s) of sense of place scholars are interested in understanding and review how the concept is described, measured, and applied before operationalizing it in their own research.

My second analysis revealed that, whether the articles in our sample took an exploratory or explanatory approach, qualitative methodologies are a common method of choice for data collection within this area of research. Specifically, traditional qualitative methods, such as semi-structured or in-depth interviews, were widely used to identify people's connections to places. One discrepancy that I encountered in our analysis is the limited use of visual methods for data collection. Our findings indicated that photo-elicitation, or a modified form of photo-elicitation, such as resident or visitor employed photo elicitation, was the most common visual method for examining dimension(s) of sense of place.

My analysis encouraged the suggested potential use of photovoice in sense of place studies. I documented only 2/47 papers that utilized this method to advance knowledge in the SES research domain. Rather than criticize scholars of the past for not utilizing this method, I will use this gap in the literature as an opportunity to argue that photovoice is a rich, innovative, and flexible tool worth utilizing in this research domain. I believe that photovoice can answer the call of previous scholars (Baldwin & Chandler, 2010; Bennett & Dearden, 2013; Masterson et al., 2018; Vitous & Zarger, 2020) who also urged for its utilization as it resulted in the advancement of meanings and values that have been neglected in the SES literature (Jones et al., 2016). In addition, over two-thirds of the articles in our sample reflected the contributory model of PPSR outlined by Shirk et al. (2012). Without straying too far into speculation, it might be the case that, because a majority of the articles took an exploratory approach, a higher degree of participation among participants was not a priority.

As cognitions and values within the dimensions of sense of place begin to take a deeper focus in SES research, the need for tools that can explore the implications of social and ecological change on individuals' sense of place in a disaggregated way becomes increasingly vital. We posit that photovoice is one of those tools. The research presented in this thesis will support the call for the increasing need to utilize this method in SES research. We hope that the results of this research will influence future research directions moving forward.

1.8 REFERENCES

Adger, W. N., J. Barnett, K. Brown, N. Marshall, and K. O'Brien. 2013. Cultural dimensions of climate change impacts and adaptation. Nature Climate Change 3:112-117. http://dx.doi.org/10.1038/nclimate1666

Adger, W. N., S. Dessai, M. Goulden, M. Hulme, I. Lorenzoni, D. R. Nelson, L. O. Naess, J. Wolf, and A. Wreford. 2009. Are there social limits to adaptation to climate change? Climatic Change 93(3):335-354. http://dx.doi.org/10.1007/s10584-008-9520-Z

Adger, W. N., S. Dessai, M. Goulden, M. Hulme, I. Lorenzoni, D. R. Nelson, L. O. Naess, J. Wolf, and A. Wreford. 2009. Are there social limits to adaptation to climate change? Climatic Change 93(3):335-354. http://dx.doi.org/10.1007/s10584-008-9520- z

Agnew, J.A. (1987) : Place and politics: the geographical mediation of state and society. Boston and London: Allen and Unwin.

Aucoin, P. M. (2017). Toward an Anthropological Understanding of Space and Place. Contributions to Hermeneutics, 395–412. doi:10.1007/978-3-319-52214-2_28

Baldwin, C., & Chandler, L. (2010). "At the water's edge": community voices on climate change. Local Environment, 15(7), 637–649. doi:10.1080/13549839.2010.498810

Bennett, N. J., & Dearden, P. (2013). A picture of change: using photovoice to explore social and environmental change in coastal communities on the Andaman Coast of Thailand. Local Environment, 18(9), 983–1001. doi:10.1080/13549839.2012.748733

Bhattacharjee, Y. (2005). ORNITHOLOGY: Citizen Scientists Supplement Work of Cornell Researchers. Science, 308(5727), 1402–1403. doi:10.1126/science.308.5727.1402

Bonney, R., C. B. Cooper, J. Dickinson, S. Kelling, T. Phillips, K. V. Rosenberg, and J. Shirk. 2009b. Citizen science: a developing tool for expanding science knowledge and scientific literacy. BioScience 59(11):977–984

Campbell, L. M., & Vainio-Mattila, A. (2003). Human Ecology, 31(3), 417–437. doi:10.1023/a:1025071822388

Canter, D. (1977). The psychology of place. New York: St. Martin's Press

Carr, A. J. L. 2004. Why do we all need community science? Society and Natural Resources 17(9):841–849. http://dx.doi.org/10.1080/08941920490493846

Carrithers, M., & Carrithers, M. (2009). nature and culture. In A. Barnard, & J. Spencer (Eds.), Encyclopedia of social and cultural Anthropology (2nd ed.). Routledge. Credo Reference: https://go.openathens.net/redirector/fiu.edu?url=https%3A%2F%2Fsearch.credoreference.com%2Fcontent%2Fentry%2Froutencsca%2Fnature_and_culture%2F0%3FinstitutionId%3D728

Castleden, H., Garvin, T., and Huu-ay-aht First Nation, 2008. Modifying photovoice for communitybased participatory indigenous research. Social Science & Medicine, 66 (6), 1393–1405.

Chapin III, F. S., Mark, A. F., Mitchell, R. A., & Dickinson, K. J. (2012). Design principles for social–ecological transformation toward sustainability: Lessons from New Zealand sense of place. Ecosphere, 3(5), 1–22. https://doi.org/10.1890/ES12-00009.1

Chapin, F. S. and C. N. Knapp. 2015. Sense of place: A process for identifying and negotiating potentially contested visions of sustainability. Environmental Science and Policy 53:1–9. doi:10.1016/j.envsci.2015.04.012

Chapin, F. S., Carpenter, S. R., Kofinas, G. P., Folke, C., Abel, N., Clark, W. C., … Swanson, F. J. (2010). Ecosystem stewardship: sustainability strategies for a rapidly changing planet. Trends in Ecology & Evolution, 25(4), 241–249. doi:10.1016/j.tree.2009.10.008

Chen, Z. (2017). PLACE AND SPACE: A REVIEW OF LANDSCAPE ANTHROPOLOGY RESEARCH. Landscape Architecture Frontiers, 5(2), 8+. https://link.gale.com/apps/doc/A567634711/AONE?u=anon~cc7a3c43&sid=googleScholar&xid=d2016e9d

Cheng, A. S., Kruger, L. E., & Daniels, S. E. (2003). "Place" as an Integrating Concept in Natural Resource Politics: Propositions for a Social Science Research Agenda. Society & Natural Resources, 16(2), 87–104. doi:10.1080/08941920309199

Cherkasskii, B. L. 1988. The system of the epidemic process. Journal of Hygiene Epidemiology Microbiology and Immunology 32(3):321-328.

Clayton, S., P. Devine-Wright, P. C. Stern, L. Whitmarsh, A. Carrico, L. Steg, J. Swim, and M. Bonnes. 2015. Psychological research and global climate change. Nature Climate Change 5:640-646. http://dx.doi.org/10.1038/nclimate2622

Conrad, C., & Hilchey, K. (2011). A review of citizen science and community-based environmental monitoring: Issues and opportunities. Environmental Monitoring and Assessment, 176, 273 – 291.

Convery, I., G. Corsane, and P. Davis. 2014. Making Sense of Place: Multidisciplinary Perspectives. Woodbridge, UK: Boydell & Brewer. http://www.jstor.org/stable/10.7722/j.ctt820r9.6

Cooper, C., Dickinson, J., Phillips, T., & Bonney, R. (2007). Citizen science as a tool for conservation in residential ecosystems. Ecology and Society, 12(2), 11 [online].

Cornwall, A., & Jewkes, R. (1995). What is participatory research? Social Science & Medicine, 41(12), 1667–1676. doi:10.1016/0277-9536(95)00127-s

Cresswell, T. (2008). Place: encountering geography as philosophy. Geography, 93(3), 132–139. doi:10.1080/00167487.2008.12094234

Davenport, M. A., & Anderson, D. H. (2005). Getting From Sense of Place to Place-Based Management: An Interpretive Investigation of Place Meanings and Perceptions of Landscape Change. Society & Natural Resources, 18(7), 625–641. doi:10.1080/08941920590959613

Devine-Wright, P., & Howes, Y. (2010). Disruption to place attachment and the protection of restorative environments: A wind energy case study. Journal of Environmental Psychology, 30(3), 271–280. doi:10.1016/j.jenvp.2010.01.008

Dickinson, J., & Bonney, R. (Eds.). (2012). Citizen science: Public participation in environmental research. Ithaca, NY: Comstock.

Dickinson, J., Zuckerberg, B., & Bonter, D. (2010). Citizen science as an ecological research tool: Challenges and benefits. Annual Review of Ecology, Evolution, and Systematics, 41, 149 – 172.

Dietz, T. (2013). Bringing values and deliberation to science communication. Proceedings of the National Academy of Sciences, 110(Supplement_3), 14081–14087. doi:10.1073/pnas.1212740110

Eanes, F., Robinson, P., Silbernagel, J. (2018). Effects of Scale and the Biophysical Environment on Sense of Place in Northeastern Wisconsin's Bioregions. Human Ecology Review, 24. doi: 10.22459/HER.24.01.2018.04

Erfani, G. (2022). Reconceptualising Sense of Place: Towards a Conceptual Framework for Investigating Individual-Community-Place Interrelationships. Journal of Planning Literature. https://doi.org/10.1177/08854122221081109

Escobar, A, 2001 Culture sits in places: reflections on globalism and subaltern strategies of localization, Political Geography 20, 139–74

Foley, J. A. (2005). Global Consequences of Land Use. Science, 309(5734), 570–574. doi:10.1126/science.1111772

Folke C and Berkes F (1998) Understanding Dynamics of Ecosystem-Institution Linkages for Building Resilience. Beijer Discussion Paper No. 112 Stockholm, Sweden: The Beijer Institute of Ecological Economics, Royal Academy of Sciences.

Foote, K. E., & Azaryahu, M. (2009). Sense of Place. International Encyclopedia of Human Geography, 96–100. doi:10.1016/b978-008044910-4.00998-6

Fredrickson, L. tech. eds. (1998) Spiritual values: Can they be incorporated into forest management and planning? Pages 239-245. Proceedings of the 1998 Northeastern Recreation Research Symposium, , the Sagamore on Lake George in Bolton Landing, New York. (1999). United States: U.S. Department of Agriculture, Forest Service, Northeastern Research Station.

Freudenburg, W. R., S. Frickel, and R. Gramling. 1995. Beyond the nature/society divide: learning to think about a mountain. Sociological Forum 10(3):361-392. http://dx.doi.org/10.1007/ BF02095827

Galliano, Steven J .; Loeffler, Gary M. 1995. Place assessment: how people define ecosystems. Technical report on file with: U.S. Department of Agriculture, Forest Service; U.S. Department of Interior, Bureau of Land Management; Interior Columbia Basin Ecosystem Management Project, 112 E. Poplar, Walla Walla, WA 99362. 42 p.

Gordon, J. C. 1993. Ecosystem management. An idiosyncratic overview. pp. 240-246 In: Defining sustainable forestry. G. H. Aplet, N.

Gubrium, A., & Harper, K. (2009). Visualizing Change: Participatory Digital Technologies in Research and Action. Practicing Anthropology, 31(4), 2–4. doi:10.17730/praa.31.4.t6w103r320507394

Haberl, H. et al. (2007) Quantifying and mapping the human appropriation of net primary production in Earth's terrestrial ecosystems. Proc. Natl. Acad. Sci. U. S. A. 104, 12942–12945

Handwerker, W. Penn, 2002 "The Construct Validity of Cultures: Cultural Diversity, Culture Theory, and a Method for Ethnography". American Anthropologist 104(1):106-122.

Harper, K. (2009). Using Photovoice to Investigate Environment and Health in a Hungarian Romani (GYPSY) Community. Practicing Anthropology, 31(4), 10–14. doi:10.17730/praa.31.4.2g576u570054w030

Hashemnezhad, H., S. A. Yazdanfar, A. A. Heidari, and N. Behdadfar. 2013. "Comparison the Concepts of Sense of Place and Attachment to Place in Architectural Studies." Australian Journal of Basic and Applied Sciences 7 (1): 219–27. http://www.ajbasweb.com/old/ ajbas/2013/January/219-227.pdf.

Hay, R. (1988). Toward a Theory of Sense of Place. The Trumpeter. 1988. 159-164.

Haywood, B. K. (2014). A "Sense of Place" in Public Participation in Scientific Research. Science Education, 98(1), 64–83. doi:10.1002/sce.21087

Hidalgo, M. C., and B. Hernández. 2001. Place attachment: conceptual and empirical questions. Journal of Environmental Psychology 21(3):273-281. http://dx.doi.org/10.1006/jevp.2001.0221

Ignatiadis, M., Daigneault, A., Sponarski, C., & Reed, J. (2020). Operationalizing sense of place to evaluate potential conflicts in natural resource-dependent rural economies. Journal of Environmental Policy & Planning, 1–21. doi:10.1080/1523908x.2020.1858769

IPBES. https://ipbes.net/values-contrast-ipbes-framework

Jacquet, J. B. and R. C. Stedman. 2013. Perceived impacts from wind farm and natural gas development in Northern Pennsylvania. Rural Sociology 78 (4):450–72. doi:10.1111/ruso.12022

Johnson, J. T. Olsen, and V. A. Sample (eds). Island Press, Covelo, California.

Jones, N. A., S. Shaw, H. Ross, K. Witt, and B. Pinner. 2016. The study of human values in understanding and managing socialecological systems. Ecology and Society 21(1):15. http://dx.doi. org/10.5751/es-07977-210115

Jorgensen, B. S., & Stedman, R. C. (2001). Sense of place as an attitude: Lakeshore owners attitudes toward their properties. Journal of Environmental Psychology, 21(3), 233–248. https://doi.org/10.1006/jevp.2001.0226

Kaltenborn, B. P. (1998). Effects of sense of place on responses to environmental impacts. Applied Geography, 18(2), 169–189. doi:10.1016/s0143-6228(98)00002-2

Khakzad, S., & Griffith, D. (2016). The role of fishing material culture in communities' sense of place as an added-value in management of coastal areas. Journal of Marine and Island Cultures, 5(2), 95–117. doi:10.1016/j.imic.2016.09.002

Klein, W., Dove, M. R., & Felson, A. J. (2021). Engaging the unengaged: Understanding residents' perceptions of social access to urban public space. Urban Forestry & Urban Greening, 59, 126991. doi:10.1016/j.ufug.2021.126991

Lewicka, M. (2011). Place attachment: How far have we come in the last 40 years? Journal of Environmental Psychology, 31(3), 207–230. doi:10.1016/j.jenvp.2010.10.001

Ley, D. (1977) Social Geography and the taken-for-granted-world. Transactions of the Institute of British Geographers 2, 498-509.

Linda E. Kruger, Margaret A. Shannon. (2000). Getting to Know Ourselves and Our Places Through Participation in Civic Social Assessment. Society & Natural Resources, 13(5), 461–478. doi:10.1080/089419200403866

Llano, C., Durán, V., Gasco, A., Reynals, E., & Zárate, M. S. (2021). Traditional puesteros' perceptions of biodiversity in semi-arid Southern Mendoza, Argentina. Journal of Arid Environments, 192, 104553. doi:10.1016/j.jaridenv.2021.104553

Lowery, D. R., & Morse, W. C. (2013). A Qualitative Method for Collecting Spatial Data on Important Places for Recreation, Livelihoods, and Ecological Meanings: Integrating Focus Groups with Public Participation Geographic Information Systems. Society & Natural Resources, 26(12), 1422–1437. doi:10.1080/08941920.2013.819954

MA (Millennium Ecosystem Assessment), 2005. Ecosystems and Human Well-Being: Synthesis. Island Press, Washington DC

Manzo, L. C. (2005). For better or worse: Exploring multiple dimensions of place meaning. Journal of Environmental Psychology, 25(1), 67–86. doi:10.1016/j.jenvp.2005.01.002

Marshall, N., Adger, W. N., Benham, C., Brown, K., I Curnock, M., Gurney, G. G., … Thiault, L. (2019). Reef Grief: investigating the relationship between place meanings and place change on the Great Barrier Reef, Australia. Sustainability Science. doi:10.1007/s11625-019-00666-z

Massey, D. (1994). Space, place, and gender. University of Minnesota Press.

Masterson, V. A., Enqvist, J. P., Stedman, R. C., & Tengö, M. (2019). Sense of place in social–ecological systems: from theory to empirics. Sustainability Science, 14(3), 555–564. doi:10.1007/s11625-019-00695-8

Masterson, V. A., Mahajan, S. L., & Tengö, M. (2018). Photovoice for mobilizing insights on human well-being in complex social-ecological systems: case studies from Kenya and South Africa. Ecology and Society, 23(3). doi:10.5751/es-10259-230313

Masterson, V. A., Stedman, R. C., Enqvist, J., Tengö, M., Giusti, M., Wahl, D., & Svedin, U. (2017). The contribution of sense of place to social-ecological systems research: a review and research agenda. Ecology and Society, 22(1). doi:10.5751/es-08872-220149

Masterson, V., Tengö, M., & Spierenburg, M. (2017b). Competing Place Meanings in Complex Landscapes: A Social–Ecological Approach to Unpacking Community Conservation Outcomes on the Wild Coast, South Africa. Society & Natural Resources, 30(12), 1442–1457. doi:10.1080/08941920.2017.1347975

Maund, P. R., Irvine, K. N., Dallimer, M., Fish, R., Austen, G. E., & Davies, Z. G. (2020). Do ecosystem service frameworks represent people's values? Ecosystem Services, 46, 101221. doi:10.1016/j.ecoser.2020.101221

Mercier, P. (2019, January 23). cultural anthropology. Encyclopedia Britannica. https://www.britannica.com/science/cultural-anthropology

Moutouama, F.T., Biaou, S.S.H., Kyereh, B., Asante, W.A., Natta, A.K., 2019. Factors shaping local people's perception of ecosystem services in the Atacora Chain of Mountains, a biodiversity hotspot in northern Benin. J. Ethnobiol. Ethnomed. 15 (1), 38.

Moya, E. M., Chavez-Baray, S. M., Loweree, J., Mattera, B., & Martinez, N. (2017). Adults Experiencing Homelessness in the US–Mexico Border Region: A Photovoice Project. Frontiers in Public Health, 5. doi:10.3389/fpubh.2017.00113

Nelson, J., Ahn, J. J., & Corley, E. A. (2020). Sense of place: trends from the literature. Journal of Urbanism: International Research on Placemaking and Urban Sustainability, 1–26. doi:10.1080/17549175.2020.1726799

Oliffe, J. L., Bottorff, J. L., Kelly, M., & Halpin, M. (2008). Analyzing participant produced photographs from an ethnographic study of fatherhood and smoking. Research in Nursing & Health, 31(5), 529–539. doi:10.1002/nur.20269

Pérez-Ramírez, I., García-Llorente, M., Benito, A., & Castro, A. J. (2019). Exploring sense of place across cultivated lands through public participatory mapping. Landscape Ecology, 34(7), 1675–1692. doi:10.1007/s10980-019-00816-9

Poe, M. R., J. Donatuto, and T. Satterfield. 2016. "'Sense of Place': Human Wellbeing Considerations for Ecological Restoration in Puget Sound." Coastal Management 44 (5): 409–426. Taylor & Francis. doi:10.1080/08920753.2016.1208037

Porteous, J.D. (1986) Bodyscape: The body-language metaphor. Canadian Geographer 30 (1), 2-12.

Quigley, Thomas M.; Arbelbide, Sylvia J. , tech . eds . 1997. An assessment of ecosystem components in the interior Columbia basin and portions of the Klamath and Great Basins: volume 3. Gen. Tech . Rep. PNW -GTR - 405. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 4 vol. (Quigley, Thomas M. , tech . ed.; The Interior Columbia Basin Ecosystem Management Project: Scientific Assessment).

Quinn, T., Bousquet, F., Guerbois, C., Sougrati, E., & Tabutaud, M. (2018). The dynamic relationship between sense of place and risk perception in landscapes of mobility. Ecology and Society, 23(2). doi:10.5751/es-10004-230239

Rajala K, Sorice MG, Thomas VA. The meaning(s) of place: Identifying the structure of sense of place across a social–ecological landscape. People Nat. 2020;2:718–733. https://doi.org/10.1002/pan3.10112

Raymond, C. M., B. A. Bryan, D. Hatton MacDonald, A. Cast, S. Strathearn, A. Grandgirard, and T. Kalivas. (2009). Mapping community values for natural capital and ecosystem services. Ecological Economics 68(5):1301-1315. http://dx.doi.org/10.1016/ j.ecolecon.2008.12.006

Reason, P. (1994). Human inquiry as discipline and practice. In P. Reason (Ed.), Participation in human inquiry (pp. 40 –56). Thousand Oaks, CA: Sage.

Relph, E. (1976). Place and placelessness. London: Pion

Ryfield, F., Cabana, D., Brannigan, J., & Crowe, T. (2019). Conceptualizing "sense of place" in cultural ecosystem services: A framework for interdisciplinary research. Ecosystem Services, 36, 100907. doi:10.1016/j.ecoser.2019.100907

Sack, R. D. (1992). Place, modernity, and the consumer's world: A relational framework for geographical analysis. Baltimore, MD: Johns Hopkins University Press.

Salomon, A. K. (2008). Ecosystems. Encyclopedia of Ecology, 350–360. doi:10.1016/b978-0-444-63768-0.00482-0

Samson, F.B., Knopf, F. L. (1996). Putting "ecosystem" into natural resource management. Journal of Soil and Water Conservation, 54(4), 288-292 http://www.jswconline.org/content/51/4/288.abstract

Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. Journal of Environmental Psychology, 30(1), 1–10. doi: 10.1016/j.jenvp.2009.09.006

Shirk, J. L., H. L. Ballard, C. C. Wilderman, T. Phillips, A. Wiggins, R. Jordan, E. McCallie, M. Minarchek, B. V. Lewenstein, M. E. Krasny, and R. Bonney. 2012. Public participation in scientific research: a framework for deliberate design. Ecology and Society 17(2): 29. http://dx.doi.org/10.5751/ES-04705-170229

Simpson, P., & Ash, J. (2020). Phenomenology and Phenomenological Geography. International Encyclopedia of Human Geography, 79–84. doi:10.1016/b978-0-08-102295-5.10678-x

Stedman, R. C. (1999). "Sense of Place as an Indicator of Community Sustainability." The Forestry Chronicle 75 (5): 765–770. NRC Research Press Ottawa, Canada. doi:10.5558/tfc75765-5.

Stedman, R. C. (2002). "Toward a Social Psychology of Place: Predicting Behavior from Place-Based Cognitions, Attitude, and Identity." Environment and Behavior 34 (5): 561–581. Thousand Oaks, CA: Sage Publications Sage CA. doi:10.1177/0013916502034005001.

Stedman, R. C. (2003). Is it really just a social construction? The contribution of the physical environment to sense of place. Society and Natural Resources 16 (8):671–85. doi:10.1080/08941920309189

Stedman, R. C. (2008). What do we "mean" by place meanings? Implications of place meanings for managers and practitioners. Pages 71-82 in L. E. Kruger, T. E. Hall, and M. C. Stiefel, editors. Understanding concepts of place in recreation research and management. General Technical Report PNW-GTR-744. U.S. Department of

Agriculture Forest Service Pacific Northwest Research Station, Portland, Oregon, USA. [online] URL: https://www.treesearch.fs.fed.us/pubs/29924

Stedman, R. C. (2016). Subjectivity and social-ecological systems:A rigidity trap (and sense of place as a way out). Sustainability Science 11 (6):891–901. doi:10.1007/s11625-016-0388-y

Stedman, R., Beckley, T., Wallace, S., & Ambard, M. (2004). A Picture and 1000 Words: Using Resident-Employed Photography to Understand Attachment to High Amenity Places. Journal of Leisure Research, 36(4), 580–606. doi:10.1080/00222216.2004.11950037

Strauser, J., Stewart, W. P., Evans, N. M., Stamberger, L., & van Riper, C. J. (2018). Heritage narratives for landscapes on the rural–urban fringe in the Midwestern United States. Journal of Environmental Planning and Management, 1–18. doi:10.1080/09640568.2018.1492908

TEEB. (2010). The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature: A synthesis of the approach, conclusions and recommendations of TEEB. Available from: http://www.teebweb.org/our-publications/teeb-studyreports/ synthesis-report/.

Thornton, T. F. (2008). Being and Place Among the Tlingit. Seattle: University of Washington Press.

Toomey, A. H., Campbell, L. K., Johnson, M., Strehlau-Howay, L., Manzolillo, B., Thomas, C., … Palta, M. (2021). Place-making, place-disruption, and place protection of urban blue spaces: perceptions of waterfront planning of a polluted urban waterbody. Local Environment, 26(8), 1008–1025. doi:10.1080/13549839.2021.1952966

Tuan, Y. F. (1974a). Space and Place: Humanistic perspective. Progress In Geography 6, 211-252.

Tuan, Y. F. (1977). Space and place: the perspectives of experience. Minnesota: University of Minnesota Press.

United States Department of Agriculture (USDA). 1996. Status ofthe Interior Columbia Bsin: Summary of scientific findings. General Technical Report 385. Portland, OR: USDA Forest Service, Pacific Northwest Research Station.

Verbrugge, L., Buchecker, M., Garcia, X., Gottwald, S., Müller, S., Præstholm, S., & Stahl Olafsson, A. (2019). Integrating sense of place in planning and management of multifunctional river landscapes: experiences from five European case studies. Sustainability Science. doi:10.1007/s11625-019-00686-9

Vitous, C. A., & Zarger, R. (2020). Visual Narratives: Exploring the Impacts of Tourism Development in Placencia, Belize. Annals of Anthropological Practice. doi:10.1111/napa.12135

Wang, C. (1999). Photovoice: A Participatory Action Research Strategy Applied to Women's Health. Journal of Women's Health, 8(2), 185–192. doi:10.1089/jwh.1999.8.185

Watson, R., Albon, S., Aspinall, R., Austen, M., Bardgett, B., Bateman, I., Berry, P., Bird, W., Bradbury, R., Brown, C., 2011. UK National Ecosystem Assessment: Technical Report. UNEP-WCMC, Cambridge, UK. Retrieved from https://www.unepwcmc.org/resources-and-data/UK-national-ecosystem-assessment

Wheeler, M. J., Sinclair, A. J., Fitzpatrick, P., Diduck, A. P., & Davidson-Hunt, I. J. (2016). Place-Based Inquiry's Potential for Encouraging Public Participation: Stories From the Common Ground Land in Kenora, Ontario. Society & Natural Resources, 29(10), 1230–1245. doi:10.1080/08941920.2015.1122130

White, Leslie. (1940). The Symbol: The Origin and Basis of Human Behaviour. Philosophy of Science 7(4): 451–463.

Williams, A. (2015). Place in Geography. International Encyclopedia of the Social & Behavioral Sciences, 149–152. doi:10.1016/b978-0-08-097086-8.72038-1

Williams, D. R. (2014). Making sense of "place": Reflections on pluralism and positionality in place research. Landscape and Urban Planning, 131, 74–82. doi:10.1016/j.landurbplan.2014.08.002

Williams, D. R., & Patterson, M. E. (1996). Environmental Meaning and Ecosystem Management: Perspectives from Environmental Psychology and Human Geography. Society & Natural Resources, 9(5), 507–521. doi:10.1080/08941929609380990

Williams, D., Stewart, S. (1998). Sense of Place: An Elusive Concept That is Finding a Home in Ecosystem Management. Forest Science. 96 (5), 18-23

Yung, L., W. A. Freimund, and J. M. Belsky. (2003). The politics of place: Understanding meaning, common ground, and political difference on the Rocky Mountain Front. Forest Science 49 (6):855–66.

CHAPTER 2

UNCOVERING PLACE-BASED MEANINGS OF MIAMI RIVER WATERFRONT RESIDENTS USING PHOTOVOICE

2.1 ABSTRACT

1. Rivers are complex social-ecological systems (SES) that provide a range of services and benefits to the communities that depend on it. The role of a river can change over time through the influence of human actions, natural forces, or both. The Miami River, located in South Florida, USA, is a 5.5-mile-long mixed used waterway that has experienced rapid urbanization over the last century and continues to see an increase in redevelopment today. The dynamic nature of this SES presents an opportunity to apply the theory of sense of place.
2. In particular, place meanings are the positive, negative, and ambivalent descriptions about why individuals or communities ascribe such a meaning to a place. Place meanings can be reconstructed overtime, though not much known about the contribution of ambivalent or negative place meanings to developing a connection to a place. Given the continuous dynamic nature of the Miami River, our study focuses on how residents ascribe meanings to the Miami River and adjacent neighborhoods and if these place meanings have changed over time.
3. I employed a modified version of the photovoice method given the COVID-19 restrictions that were in place at the time of this study. I sampled four participants residing in the neighborhood of Allapattah. Photographs taken by participants illustrated aspects that they valued about the Miami River and Allapattah and issues or concerns that they felt should be brought to our

attention. Semi-structed interviews were conducted to discuss the production and meaning of the photographs.

4. My findings indicate that, despite negative or ambivalent meanings ascribed to the Miami River and the neighborhood of Allapattah, participants were still able to develop a connection to their environment. Photovoice proved to be a valuable tool for examining reconstructed places meanings in SES experiencing change.

Keywords: Sense of place, social-ecological systems, photovoice, COVID-19, qualitative

2.2 INTRODUCTION

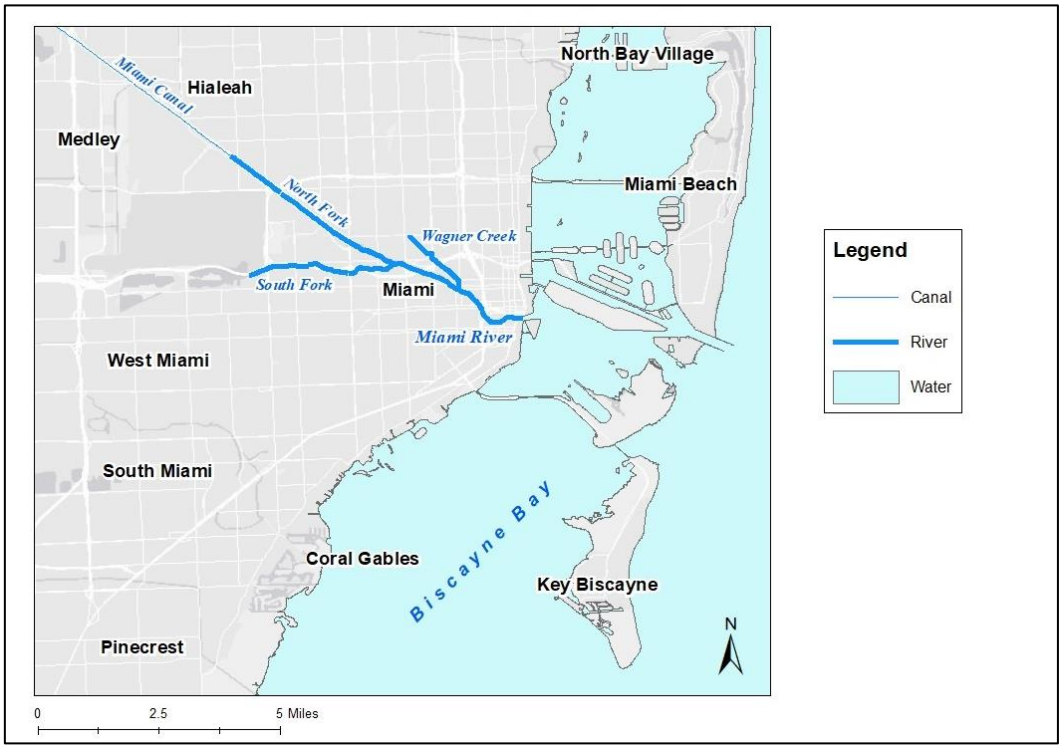
Rivers are dynamic and complex social-ecological systems that provide a multitude of benefits to people and sustain a quality of life for the communities that depend on it. Goods and services that are provided by rivers to humans include tangible assets, such as food production, recreation, and transportation, and intangible assets such as religious and ancestral belief systems and a sense of place (Anderson et al., 2019; Everard & Moggridge, 2012; Verbrugge et al., 2019; Yeaklet et al., 2016). The dynamic nature of a river system is best exhibited through its changing role and appearance over time, with both aspects being influenced by human and natural forces (Schönach, 2017). Acknowledgment of decisions made in the past and current decisions made for the future demonstrate the interaction between human and natural forces and has led to the conceptualization of rivers as social-ecological systems (Parson et al., 2016; Verbrugge et al., 2019).

Nestled within the downtown Miami area in South Florida, USA, the Miami River is a 5.5-mile-long mixed-use river system that has witnessed a variety of social-ecological changes, including urbanization and an increase in redevelopment, over the last century (Daniele, 2021; George, 2013). The location of the Miami River, along with the ecosystem services and benefits that are derived from the river, serves as a compelling model case to apply the social-ecological systems (SES) framework. The social aspect of SES within an urban area includes all the social elements and constructs of human society ranging from the intangible assets such as recreating, socializing, and engaging in community or leisure activities to the more tangible assets such as constructing roads and buildings and transportation of goods and services (Vogt 2020). The ecological aspects of SES within an urban area includes all the biological/ecological and physical elements, such as green spaces like parks or community gardens (Vogt, 2020).

The Miami River provides a majority of these services to its neighboring communities, in addition to acting as a vital economic engine to the City of Miami. Seen as a centralized hub of marine and trade activity, the Miami River, and the Port of Miami River, play a crucial role in the city's economy. The Miami River's port, Port of Miami River, is the fourth largest port in South Florida, bringing in an estimated $4 billion dollars in cargo on an annual basis, with shipments to 29 nations and territories of the Caribbean basin (City of Miami Economic Initiatives, n.d.). The Miami River Corridor is home to many multi-cultural neighborhoods such as Little Havana, Spring Garden, Overtown, and Allapattah, its banks providing mixed housing for its residents in addition to commercial and retail space.

The Miami River Corridor also includes nine major parks that offers every type of recreational activity such as boating, kayaking, riverwalks for running and biking, fishing, and more. In addition to mixed housing and recreational uses, The Miami River hosts several historical sites such as the 2,000-year-old Miami Circle, 1844 Fort Dallas, and the 1856 Wagner Homestead, the oldest standing home in Miami-Dade County (Miami River Commission Annual Report, 2021). The Miami River Corridor has attracted a diverse range of activity to its banks since the time of the first settlements of the Tequesta Indians and has evolved into a young and prosperous city within the short time span of a century. The dynamic nature of the Miami River serves as a model case for applying the theory of sense of place to this complex SES. Specifically, application of the theory could expand on knowledge about how the surrounding communities perceive and experience change.

Figure 2-1. Miami-Dade County Region: Location of the Miami River



Sense of place is defined as “the meanings and attachments to a setting held by an individual or group” (Tuan, 1977). As an overarching multidimensional concept (see Hashemnezhad et al. 2013), sense of place is comprised of several inter-related sub-dimensions such as place attachment, place identity, place dependence, and place meanings. Place meanings are the positive, negative, and ambivalent descriptions about why individuals or communities perceive and attribute such a meaning to a place (Jacquet & Stedman, 2013; Manzo, 2003; Manzo, 2005; Moore, 2000; Stedman et al., 2004). Place meanings that are ascribed to places can be reconstructed overtime (Cheng et al. 2003; Sack, 1992). Of particular interest to this chapter is how place meanings are reconstructed when places, such as social-ecological systems, change.

Engaging with place meanings allows SES researchers to identify factors, such as the social or political processes, that catalyze place meaning to change and examine the cognitive-emotional factors that determine how individuals and communities respond to SES change (Adger et al., 2009; Adger et al., 2013; Clayton et al., 2015; Cheng at al., 2003; Masterson et al., 2017; Masterson et al., 2017b). To elicit this type of data, SES researchers have utilized a wide range of qualitative research methods to uncover the meanings that individuals ascribe to places (Lau, see Chapter 1). While a majority of the qualitative research methods used are classified under ‘traditional’ (e.g. semi-structured or in-depth interviews), an opportunity presents itself to advocate for an increased usage of visual research methods within SES research. In particular, I will focus on the usage of photovoice to examine people-place relationships within SES.

Photovoice is a community based participatory research (CBPR) method that combines photography and social action to empower communities to: (1) document

community strengths and concerns; (2) promote dialogue and shared knowledge about community and personal issues; and (3) reach policy makers (Wang, 1999). Photovoice is an underutilized method in the SES literature. Here we advocate for further usage of this method, as photovoice has the potential to evoke the meanings and values that are underrepresented in the SES literature. The images taken by photovoice participants are used to understand the multiple perspectives of the photographer regarding a specific topic or issue. Further, images have the power to elicit deeper, latent meanings than words alone could. The parts of the brain that process visual information are progressively older than the parts that process verbal information. Images have the power to elicit deeper elements of the human consciousness than verbal exchanges (Harper, 2002). This is not to say that one form of symbolic representation is less significant than the other. Rather, both types of data, both visual and textual, are considered to be important in the visual analytical process. Additionally, photovoice participants have the capacity to strategically choose and/or manipulate what is and what isn't included in an image.

Yates (2010) postulates this phenomenon as 'window to the world' vs. 'window to identity' photographic research. On the one hand, 'window to the world' photographic research aims to understand the daily social setting of the participant in an attempt to advance knowledge about the factors that influence their personal experience. On the other hand, 'window to identity' photographic research provides the researcher with a more intimate look at the inner life of the participant in an effort to grasp a fuller understanding of their perspectives, the purpose of the production of certain photographs, and the meanings attributed to them (Yates, 2010). Although images can capture different

elements and be interpreted in a multitude of ways, Harper (2002) posits that: “when two or more people discuss the meaning of photographs, they try to figure out something together. This is, I believe, an ideal model for research.” With this theoretical basis in mind, we aim to use photovoice as a scoping tool (Masterson et al., 2018) to create an inventory of the factors and perspectives that could potentially influence our participants’ experience living near the Miami River.

The overall aim of the study presented in this chapter is to operationalize the theory of sense of place, specifically examining the dimensions of place meanings, to examine how individuals perceive and experience change while living in the Miami River Corridor. To further exemplify the river’s dynamic nature, I will provide a historical overview of the Miami River. By focusing on distinct time periods throughout the history of the Miami River, the purpose of this historical overview is twofold: (1) to illustrate how the river provided a range of services and benefits to the growing population of Miami, with a specific focus on existing land uses that were established along the river, and (2) how urbanization impacted the river that led to its degraded and neglected state. I will also illustrate the efforts that were made to improve quality of life for human residents along the river and the strategic infill plans that continue to guide land uses today. To uncover the place meanings that participants ascribe to the Miami River, I will use photovoice to identify factors that could lead to a reconstruction of place meanings. A review of the results and limitations of the method will be discussed. I will answer three research questions:

(1) What place meanings do participants ascribe to the Miami River and the adjacent neighborhoods that they reside in?

(2) What changes threaten or enhance their ascribed place meanings?

(3) How are participants responding to these changes?

2.3 HISTORICAL OVERVIEW

2.3.1 EARLY SETTLEMENTS (1500-1896)

Many of Miami's residents would be surprised to learn that the birth and growth of Miami occurred along the Miami River. Around the time that the first Paleo-Indians settled along the edge of South Biscayne Bay 10,000 years ago, the 4.5-mile-long river extended from Biscayne Bay to the Everglades and was fed by numerous underground freshwater springs that bubbled up through the porous lime rock along its route (Gaby, 1993; George, 1996). The headwaters of the Miami River originated in the Atlantic Coastal Ridge, which formed a natural dam that impounded the water that flowed from the eastern edge of the Everglades. A small depression formed in the ridge and allowed the freshwater to escape in a natural fall, often referred to as the Miami River Rapids (Gaby, 1993). These rapids formed the north and south forks, which are two clearly and equally distinct branches of the Miami River. From the ridge, the river meandered in a southeasterly direction towards Biscayne Bay (Gaby, 1993).

As early as 2000 B.C., the Tequesta inhabited the South Florida peninsula and built settlements stretching from the Florida Keys to Broward County, with the largest concentration of settlements occupying the north bank of the Miami River (Gaby, 1993; George, 1996). Upon Juan Ponce De Leon's arrival to Florida in 1513, and in addition to the Spanish entrada that same year, the lifestyle of the Tequesta radically changed. Victims of disease, war, and emigration to Cuba and other Caribbean islands, the Tequesta had virtually vanished 250 years after the Spanish arrival (Gaby, 1993; George,

1996). After the disappearance of the Tequesta and Florida's other native populations, Spain began to exercise control over Florida at the beginning of 1565. This control lasted for nearly 250 years (George, 1996). From 1784 to 1821, Spain liberalized settlement policies in an effort to encourage people from other countries to settle in Florida. Several Bahamian families accepted land offers from Spain and used areas along the Miami River and Biscayne Bay to farm, hunt, fish, and salvage wreckage from coastal shipping traffic (Gaby, 1993; George, 1996).

In 1830, Richard Fitzpatrick purchased the Bahamian-held lands along the Miami River and built a plantation where he grew coconuts, sugar cane, pumpkins, limes, corn, sweet potatoes, and tropical trees. However, he was forced to abandon his plantation shortly after the commencement of the Second Seminole War in 1835 (Gaby, 1993; George, 1996). This led to the rapid depopulation of civilians from Miami. As the civilian population declined, a military presence settled in the area. The United States Army established Fort Dallas as a military outpost on a portion of Fitzpatrick's abandoned slave plantation, and from here they periodically paddled up the Miami River into the Everglades to engage in combat with Native Americans (George, 1996; Gaby, 1993).

During the mid-1840's, two coontie starch mills were built adjacent to the Miami River Rapids, the first built by George and Thomas Ferguson on the north fork of the river and the second built by Dr. Robert Fletcher on the south fork (Gaby, 1993). Coontie starch, made from the root of the native cycad plant, *Zamia*, was widely sold throughout the United States during this time (George, 2013). The coontie starch business was perhaps the first manufacturing industry on the Miami River, thus establishing the river as a locale for business (Gaby, 1993). As the second Seminole War came to an end in

1842, Fitzpatrick's ambitious nephew, William English, acquired his uncle's former land and reconstituted it as a slave plantation, adding new buildings to the complex (Gaby, 1993; George, 1996). However, Fort Dallas would again be re-established as a military outpost for a second time during the Third Seminole War, which lasted from 1855 to 1858. Though the Third Seminole War was fought on a much smaller scale in comparison to the First and Second Seminole Wars, it further discouraged civilians from settling in Miami (George, 1996). After the end of the U.S. Civil War in 1865, influential settlers, such as Julia Tuttle and William and Mary Brickell, arrived in Miami (George, 1996). The Brickell family arrived during the early 1870's and became successful traders and real estate investors (Jackson et al., 1973; George, 1996). In 1891, Julia Tuttle moved to Miami from Ohio, purchased the William English Plantation, Fort Dallas, and began building her home (George, 1996; George, 2013). Meanwhile, Henry M. Flagler, an American industrialist, multi-millionaire, and founder of Standard Oil, was extending his railroad south along Florida's east coast and developing cities and resorts along the way. Julia Tuttle met Henry M. Flagler in 1896, and she persuaded him to extend his railroad to Miami, including the Miami River. In exchange for extending his railroad, Tuttle offered Flagler 300 acres of prime real estate to build his railroad and the future Royal Palm Hotel. Flagler accepted the deal and, in addition to extending his railroad, Flagler also agreed to lay the foundations for a city on both sides of the Miami River (Gaby, 1993; George, 1996). As Flagler laid out the city streets, he installed water and sewer lines along Avenue D (known today as Miami Avenue) and 14th street (SE/SW 2nd St). Untreated wastewater was discharged into the river from a single outfall under the Avenue D bridge (City of Miami, 1992).

By the time that the first train entered Miami on April 13th, 1896, tourists and incoming residents would begin to see a city gradually emerging on both sides of the river (George, 1996). Flagler built the Royal Palm Hotel on the north side of the Miami River near Biscayne Bay, and it became a popular destination spot for tourists who arrived via the railroad or through yachts, which could now cross Biscayne Bay through a channel that Flagler dredged to his hotel dock (City of Miami, 1992; George, 1996). Tourists and residents alike enjoyed 50 cent paddle wheel "jungle" cruises up the 4.5-mile natural course of the river to the rapids at the edge of the Everglades and popular tourist attractions like Musa Isle, Coppinger's Indian Village, and Alligator Joe's (City of Miami, 1992; Gaby, 1993; George, 1996; George, 2013). On July 28th, 1896, 344 registered voters, mostly Black laborers, packed into a wooden frame building called The Lobby on Avenue D near the Miami River and voted for the incorporation of the City of Miami (George, 1996). As Miami continued to grow at the outset of the 20th century, the Miami River changed from a simple transportation route to a trade center with business opportunities created by the Florida East Coast Railroad, which built warehouses and docks to serve the area's growing trading center (Jackson et al., 1973; Gaby, 1993). For example, winter vegetables arrived through Miami River and were loaded onto freight cars and shipped northbound. Boat construction and marine repair enterprises were established along the Miami River and city residents purchased seafood, fruits, vegetables, and dry goods along the riverbanks (City of Miami, 1992; Gaby, 1993).

2.3.2 HISTORICAL OVERVIEW: THE YOUNG AND GROWING CITY OF MIAMI (1897- 1997)

In addition to a rapidly changing social scene along the Miami River, the natural conditions of the river were dramatically altered during the early 1900's as well. In 1909, the channel that led to the ancient coastal ridge was blasted for construction of the Miami Canal portion of the Everglades drainage project (Gaby, 1993; George, 1996). As a result, the Miami River Rapids were removed to build the canal. The Miami Canal, or C-6 Canal, is a canal that flows in a southeasterly direction for 77 miles from Lake Okeechobee and meets with the Miami River near Miami International Airport (South Florida Water Management District, n.d.). With the Miami River now connected to Lake Okeechobee through the Miami Canal, the water table dropped sharply and the muddy Everglades water flowed freely through this new canal and into the Miami River (Gaby, 1993; George, 1996; George, 2013; Daniele, 2021). Untreated wastewater that was discharged directly into the Miami River mixed with the muddy Everglades water. As a result, the water quality of the river became unhealthy and unappealing. To tackle the issue, the wastewater outfall line was extended 50 feet farther into the river and lowered to a depth of 9 feet (City of Miami, 1992).

However, the sewer system grew with the city, and it was specifically designed to discharge both stormwater runoff and untreated wastewater directly into the river and nearby Biscayne Bay (Dade County Grand Jury Report, 1991, p. 10). Several sewage outfalls were built along the Miami River, as well as a trunk line extending 400 feet into Biscayne Bay (City of Miami, 1992). Up until the mid-1920's, in total, the young City of Miami established 70 sewage outfalls, including 29 on the Miami River, that discharged 30-40 million gallons of raw sewage per day (Metro-Dade DERM, 1990). From then on, untreated wastewater was an enormous problem for the Miami River (Cole et al., 2005).

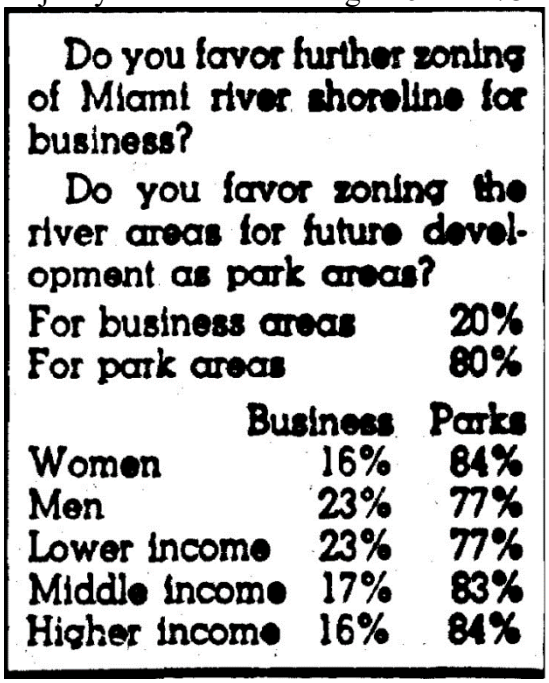
In an effort to address the issue, the Miami-Dade County had intended to implement a comprehensive treatment system in 1925. Unfortunately, the plan was immediately thwarted by several tumultuous events such as the excruciatingly hot summer and unusually cold winter of 1925, the great hurricane of 1926, the land speculation collapse of 1925-1927, and the Great Depression (Gaby, 1993; Cole et al., 2005; George, 2013).

In 1933, the U.S. Army Corps of Engineers dredged, for the first time, a 15-foot-deep channel in the Miami River and carried out a congressional mandate to make the Miami River a federal navigable waterway (Gaby, 1993; Cole et al., 2005). Local businesses and civic leaders successfully lobbied the federal government to dredge the river in hopes that opening the river to navigation would attract businesses in boat repair, yacht storage, and international trade and shipping (City of Miami, 1992). The river remains in its same configuration today; as a 5.5-mile navigable channel that connects to Biscayne Bay and Lake Okeechobee through the Miami Canal (Gaby, 1993).

The City of Miami enacted its first zoning ordinance in August 1934 (City of Miami, 1992). In general, land uses are determined by zoning laws. Because much of the existing land uses established along the river occurred *prior* to the enactment of first zoning ordinance, many of the existing land uses at the time remained in place (Metropolitan Dade County, 1962). However, during the mid-1930's, there was much debate about the future of the Miami River and the role it would play for the growing city and its inhabitants. Some residents wanted the river to be reserved for residential housing and park usage while local business and civic leaders persisted in promoting the Miami River as a growing marine industry (City of Miami, 1992). The approved zoning ordinance that was unveiled in August 1934 preserved residential subdivisions and also

set aside land for marine businesses to establish and grow. This resulted in an irregular zoning pattern throughout the full extent of the riverfront area of the Miami River, totaling 42% as single family and multifamily residential, 52% business and industrial, and 6% park and public property through the remainder of the 1930's and into the 1940's (City of Miami, 1992). The debate between residential/park uses vs. business/industrial uses grew so fierce following the implementation of the zoning ordinance that a poll from the Miami Herald published in May 1941 revealed that an overwhelming 80% of respondents preferred further zoning of the riverfront for park purposes than for business use (Miami Herald, 1941).

Figure 2-2. Miami Herald Poll from May 18, 1941. Newspaper Article titled "Overwhelming Majority in Favor of Zoning Miami River for Parks"



Do you favor further zoning of Miami river shoreline for business?

Do you favor zoning the river areas for future development as park areas?

For business areas	20%
For park areas	80%

	Business	Parks
Women	16%	84%
Men	23%	77%
Lower income	23%	77%
Middle income	17%	83%
Higher income	16%	84%

The United States entry into World War II advanced the Miami River's role as a center of heavy marine and industrial usage (Gaby, 1993; George, 2013). Boat construction businesses rapidly emerged along the riverfront, and it became a center for

the construction of patrol torpedo (PT) boats, air rescue boats, and coastal patrol boats (City of Miami, 1992; Gaby, 1993). Over the next decade, the establishment of these boat works businesses slowly solidified the acceptance of the Miami River as a working river intermixed with residential and recreational opportunities (City of Miami, 1992; Gaby, 1993). Diesel exhaust (George, 2013) and oil spills (Gaby, 1993) spilled into the river, in addition to the untreated wastewater that was already being discharged (Jackson et al., 1973; City of Miami, 1992). In 1947, the adverse effect of these acts came to light when quality tests administered by the Florida State Board of Health and U.S. Public Health Service revealed widespread contamination of the Miami River and Biscayne Bay; they were thus declared unsafe areas for shell fishing, swimming, and other recreational activities (Dade County Grand Jury Report, 1991, p. 11). According to Gaby (1993), individuals continued to use the river for such activities, though there were no officially documented reports of individuals falling ill due to the heavy pollution. The creation of the Virginia Kew Sewage Treatment Plant in 1956 limited the amount of untreated wastewater discharged into Biscayne Bay; however, the 29 outfalls along the Miami River continued to discharge untreated wastewater into the river (Dade County Grand Jury Report, 1991, p.10).

The latter half of the 20th century marked perhaps the most unstable era of the Miami River. Throughout the 1960's-80's, the Miami River experienced repeated cycles of pollution and crime, followed by clean up campaigns, beautification committees, and/or revitalization plans (City of Miami, 1992; Gaby, 1993, George, 2013). An article published by the Miami Herald in January 1960 proclaimed that the Miami Beautification Committee would set its sights on the Miami River, calling it the "shortest, ugliest

waterway in America" (Miami Herald, 1960). Efforts of this nature were well-intended and resulted in short term improvements, but ongoing issues persisted (City of Miami, 1992). For example, the Miami River Planning Report (1962) outlined several sources of pollution such as untreated wastewater continuing to be discharged from yachts and house boats and oil from boat captains and industries on or near the waterway. In an effort to improve the water quality of the river, the Miami River was added to the Biscayne Bay Aquatic Preserve system, yet progress towards improvement was slow in part because of a lack of coordination and discrete jurisdictions along the river among numerous city, county, state, and federal agencies (City of Miami, 1992).

In addition to its degrading environmental quality, limited law enforcement brought unwanted illicit activities, such as the smuggling of drugs and undocumented immigrants, to the Miami River (Dade County Grand Jury Report, 1991, p. 3; Gaby, 1993; George, 2013). Development along the river, too, had slowly diminished, though it remained an important working waterway generating jobs and tax revenue (Jackson et al., 1973; George 2013). The Miami Comprehensive Neighborhood Plan (MCNP) 1976-86 concluded that "the Miami River is a working river, a major resource. It is presently underutilized and offers many redevelopment opportunities.". The MCNP proposed several recommendations to promote mixed-use redevelopment opportunities and encourage waterfront activities. However, many of these recommendations were never implemented.

Toward the end of the 20th century, the tradeoff for a prosperous and glamorous city came at a cost that was endured by the Miami River (Dade County Grand Jury Report, 1991, p.1). Untreated wastewater was limitedly discharged into Biscayne Bay,

yet it continued to be discharged into the river through the 29 outfalls along it. Progress meant industrialization and commerce. The existing land uses, namely marine industry uses such as boatyards, marinas, repair facilities, metal recycling, and salvage operations, that were established along the river also discharged metals and waste material, contributing further to its pollution and general neglect (Dade County Grand Jury Report 1991, p.2, City of Miami, 1992; Gaby, 1993; George, 2013). In addition to earning the title of the "shortest, ugliest waterway in America" (Miami Herald, 1960), the Miami River also gained the distinction of being a "lawless", "wide-open", "unwatched door" where "anything goes" (Dade County Grand Jury Report, 1991, p. 4). Because there was no legal structure that dictated which local, state, or federal agencies had regulatory control over specific parcels of the Miami River, the lack of a visible law enforcement presence attracted illicit activities to the river (Dade County Grand Jury Report, 1991, p. 4; City of Miami, 1992; George, 2013).

Further examination of the ongoing issues of the Miami River led to Governor Bob Graham creating the Miami River Management Committee (MRMC) in 1983. The task of this committee was to make recommendations for the river's clean-up and enhancement (City of Miami, 1992; Miami River Commission, 2001). Of the many recommendations that were implemented by the committee, the most notable one was the establishment of a permanent organization that supervised the planning and management of the river. That organization was the Miami River Coordinating Committee (MRCC) and it consisted of representatives of the Florida Governor, the Miami-Dade County Manager, the City Manager, river businesses, and citizens of the public (City of Miami, 1992). The MRCC, the City of Miami Commission, and the City of Miami Department of

Planning all agreed that a comprehensive inventory, analysis, and growth management plan for the river was needed. Nevertheless, the completion of a Miami River growth management plan would be unavailable for the next several years due to a lack of funding sources (City of Miami, 1992; Miami River Commission, 2001).

In Fall 1991, a Dade County Federal Grand Jury report sharply criticized the lack of leadership exhibited by the City of Miami and concluded that "…More aggressive action needs to immediately be taken. Action, not more studying of the river's problems, needs to occur today". Additionally, it urged that the "community must immediately elevate the restoration, maintenance, and governance of the river to the highest priority. Failure to do so will have a negative impact on the quality of life and reputation of [the Miami] community" (Dade County Grand Jury Report, 1991, p. 21). Recommendations for improving the environmental quality of the river suggested that:

1. "Municipal and county governments need to complete renovations to the stormwater drainage and sanitary sewer systems."
2. "Prohibit the direct run-off from private and public properties and discharge of industrial wastes [and] enhance enforcement of existing laws." (p.16).

The most pressing recommendation from the 1991 Dade County Grand Jury Report urged that the "local government needs to establish a port authority over the Miami River. This authority should govern and coordinate all regulations, the needs of the river, the needs of the river's industry and the needs of the community at large" (p. 10). The following year, the City of Miami prepared and adopted the Miami River Master Plan in an effort to reexamine important issues, analyze potential solutions, and recommend future redevelopment opportunities along the river.

Recommendations for improving land use and design along the river stipulated that:

1. Continuation of accommodating a wide variety of land uses, including water-dependent marine businesses, private residences, public parks, institutions, offices, and hotels. All future developments should maximize its orientation to and beneficial use of the riverfront.
2. The river's potential as a recreational attraction for residents and visitors should be exploited. Access and views should be enhanced from bridges and adjacent streets. (Quoted directly from City of Miami, 1992).

Five years later, the Florida Legislature created the Miami River Study Commission (MRSC) to assess the main issues of the river. The MRSC reported back to the Florida Legislature and issued a "call to action". The report urged and called for "a forceful, community wide effort to clean up the river and raise its potential" (Miami River Study Commission Report, 1998, p.3). In response to the report's urging call, the Florida Legislature created the Miami River Commission (MRC) under statute 163.06, one of the two statutes that governs the MRC. Under this statute, the Miami River Commission was established as "the official coordinating entity for all public policy projects related to the Miami River and united all governmental agencies, businesses, and residents in the area to speak with one voice on river issues" (F.S. Chapter 163.06).

2.3.3 HISTORICAL OVERVIEW: THE REVIVAL OF A NEGLECTED RIVER (1998-PRESENT)

The creation of the MRC came at a critical moment as the Spring 1998 Dade County Grand Jury issued another scathing report criticizing the city's lack of leadership for the slow progress in improving the quality of life of the Miami River: "[we] intended

to deliver a wake-up call to our community and state. Increased awareness, participation, and perseverance by our entire community is needed… As a grand jury, we have identified the lack of local political leadership and initiative as a primary impediment to progress" (Dade County Grand Jury Report, 1998, p. 15-16). The 1998 Dade County Grand Jury found substantial improvements from the concerns that were previously mentioned by the 1991 Fall Dade County Grand Jury. Specifically, they found that "exceptional strides were made to reducing the continued pollution of the river". The entire antiquated sewer system that once discharged untreated wastewater into the river was completely reconstructed and regular detection and stringent prosecution of polluters of the Miami River was treated as a top priority by several county and state agencies such as Miami-Dade County Department of Environmental Protection, Miami-Dade County State Attorney's Office, the State of Florida Department of Environmental Protection, and the Florida Marine Patrol (Dade County Grand Jury Report, 1998, p. 11).

In 1999, the Florida Legislature adopted the Urban Infill and Redevelopment Act in an attempt to assist local governments in implementing their local comprehensive plans (F.S. 163.2517). Perhaps the most significant contribution of this act by the Florida Legislature was that it specifically authorized the MRC, the City of Miami, and Miami-Dade County to prepare and adopt a single, multi-jurisdictional strategic plan for the entire Miami River Corridor (F.S. 163.065). The City of Miami, MRC, and Miami-Dade County, under a joint planning agreement, applied to the Florida Department of Community Affairs for an urban infill planning grant. Upon approval of the grant, the three entities collaborated on a two-year planning process to create an urban infill plan for the Miami River Corridor (Miami River Commission, 2001).

During the two-year planning process of the urban infill plan, Greenways Incorporated, in partnership with the Trust for Public Land, prepared the Miami River Greenway Action Plan that was adopted by the Miami River Commission in 2001 (Greenway Action Plan, 2001). The Greenway Action Plan outlined a framework of action and implementation steps for the future development of a river greenway system. Perhaps the most significant contribution of the Greenway Action Plan would be the completion of a comprehensive network of trails, bikeways, and walkways adjacent to the river that link together and serve as public access points for residents and visitors (Greenway Action Plan, 2001).

After a two-year planning process, the City of Miami, Miami-Dade County, and MRC created and adopted the Miami River Corridor Urban Infill Plan (UIP) in 2002 (Miami River Commission, n.d). Previous planning efforts, such as Miami River Study Commission Report (1998), the Miami River Master Plan (1992), and the Miami River Greenway Action Plan (2001), served as a foundational basis for the UIP. The main objective of the UIP was to establish a unified vision for the future development of the Miami River Corridor, promote it as a multi-modal transportation corridor and protect the scale, quality, and character of Miami's oldest businesses and neighborhoods.

The UIP posited that its success would require substantial investment along the river from both private and public sectors. The UIP argued that "public investment associated with the design of public buildings, spaces, parks, and greenways will dramatically enhance the value of property within the Miami River Corridor and will 'set the bar' higher for private sector development through a heightened quality of design on all public projects". Additionally, the UIP recommended that the local government

support ‘catalytic’ redevelopment projects within the Miami River corridor and encouraged mixed income housing provided that future redevelopment projects did not encroach upon existing maritime business (UIP, 2002).

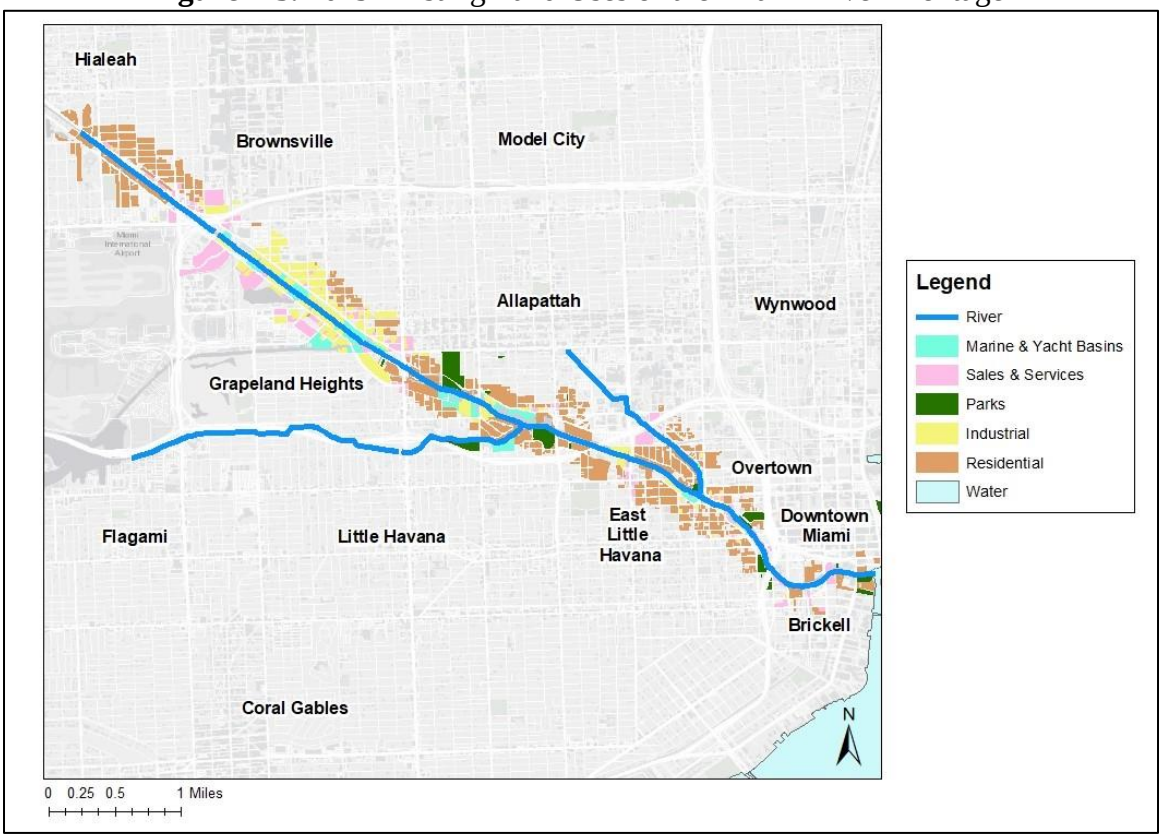
To combat crime on the river, Governor Jeb Bush initiated Operation River Walk on February 2001 as a comprehensive multi-agency, multi-year program to establish a secure environment for businesses and communities along the Miami River. One of the main goals of Operation River Walk was to enhance law enforcement efforts on the Miami River, specifically targeting the inflow of drug trafficking and improving regulatory enforcement. The UIP strongly recommended continued funding for Operation Riverwalk from the local, state, and federal government (UIP, 2002). In summary, the UIP outlined a total of 71 Urban Infill Implementation Steps to revitalize the river that addresses issues relating to housing, transportation, economic development, crime prevention, neighborhood and revitalization, and open space and recreation.

Four years after the implementation of the UIP, a 2006 annual update report prepared by the Miami River Commission classified 60 of the 71 implementation steps that were completed or ongoing with significant progress (Miami River Commission, 2006). Implementation steps that were outlined and categorized under “Public/Private Investments Along the River” were among the categories that had the most significant progress. For example, support for catalytic redevelopment projects in the Miami River Corridor, included but were not limited to, the Scottish Rite Temple, Mahi Shrine, and the Florida Yacht Basin. Other implementation steps that were categorized as “complete” or “ongoing with significant progress” included Governor Bush’s “Operation Riverwalk”, which reported that over 2,000 pounds of cocaine were seized, and 12 vessels found with

illegal drugs were sank to create artificial reefs and the construction of the Miami River Greenway. Although the MRC no longer compiles annual updates of the UIP, updates are still given on an informal basis (Miami River Commission, personal communication).

According to the MRC website, one of its current goals is the continuation of the construction of the Miami River Greenway. At a July 2022 MRC public meeting, it was publicly reported that completion of the greenway stands at 67%. Development projects continue to be planned along different sections of the river (personal observation). For example, Miami's urban development review board conditionally approved a proposal for the construction of two multi-family residential buildings totaling 593 rental units and 862 parking spaces. The residential project, proposed by River Rapids LLC, will be located at 2750 NW South River Drive (Miami Today News, 2022). Newgard development group obtained a $170 million dollar construction loan for the Lofty Condo along the Miami River. The project, located on 99 S.W. 7th Street, will rise 44 stories high and include 364 condos, 12,000 square feet of commercial space, waterfront dining, and a 400 feet marina that will be open to the public to dock (South Florida Business Journal, 2022).

Figure 2-3. 2019 Existing Land Uses of the Miami River Frontage



Although a centralized clearinghouse is now in place for the river, it continues to be dubbed as the "Wild West" due to the unlawful charter boat operations that dominate the Miami River today. Throughout the week, and especially on the weekends, charter boats blasting loud music with float mats rolled up to their stern can be seen carrying passengers wearing common themed bathing suits on the river. Charter boats can be booked by multiple parties in a day, so they are often seen traveling up and down the river in a hurry, violating speeding laws, and creating a dangerous wake in their path (personal observation). However, the charter boat operations run far deeper than violating noise ordinances or creating destructive wakes and have involved prostitution, narcotics, tax evasion, or fraud (U.S. Coast Guard Investigate Services, personal communication).

The unlawful charter boat operations are estimated to be an $800,000 business and law enforcement resources are spread too thin to combat these issues (U.S. Coast Guard Investigative Services; Miami-Dade County Police Department Marine Patrol Unit, personal communication).

The Miami River has changed tremendously over the past decade. The warehouses and docks that were established along the river at the beginning of the 20th century have evolved into marine industrial hubs and are protected by special zoning ordinances today. Efforts to improve the environmental quality of the river lagged at first, but it eventually became and continues to be a priority among several state and local agencies. Collaborative and strategic plans, such the Miami River Urban Infill Plan and the Miami River Greenway Action Plan, have altered the social fabric of the river by bringing in additional revenue for the city through catalytic redevelopment projects that attract locals and tourists to the area. In addition, improved public access to the river through walkways and bikeable paths is nearing completion. The MRC has made significant strides in improving the quality of the river, yet the decades old problem of lawlessness on the river has taken on a new form. A new era of charter boat operations has dominated the river and law enforcement is struggling to catch those who engage in unlawful behavior.

In summary, I reiterate our argument that the Miami River is a quintessential example of a social-ecological system. I believe that this unique waterway can serve as a model case for investigating how social-ecological change impacts an individual's sense of place. Using the photovoice method, I will examine the ascribed place meanings of participants living in the communities near the Miami River.

2.4 METHODS

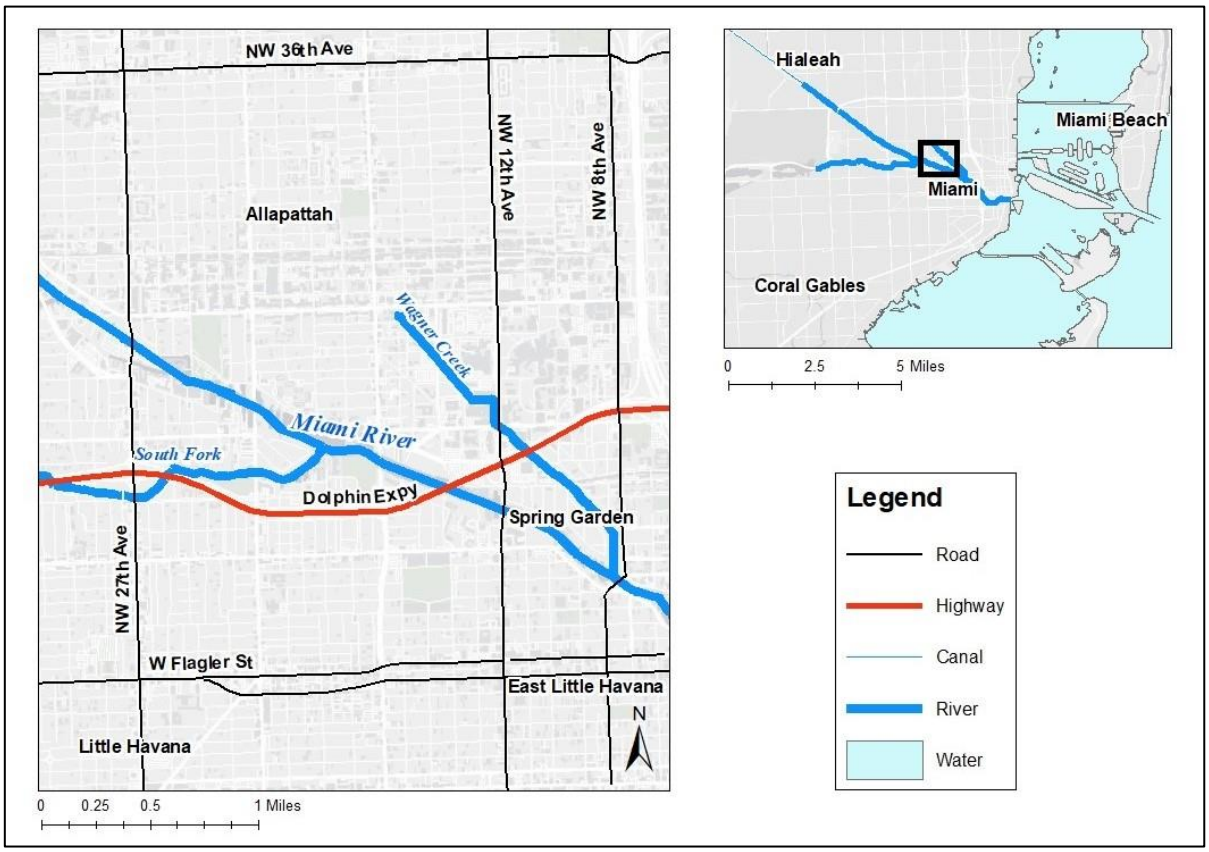
2.4.1 DATA COLLECTION

My fieldwork occurred in two phases and spanned from May 2021 to July 2022. During May 2021, I conducted reconnaissance trips along the Miami River and attended several MRC public hearings for participant observation. MRC public meetings are held every first Monday of the month (except August) and agenda item cover topics such as zoning ordinances or amendments, proposed development projects, and discussions regarding illegal charters on the river. Detailed field notes were written during these meetings and used to identify and triangulate ongoing issues shared by our participants. The neighborhoods of interest on the north side of the river included Spring Garden, Highland Park, Allapattah and East and West Little Havana on the south side. I selected these neighborhoods to recruit participants because of the concentration of mixed-use residences and businesses that exist in this region of the river. Some neighborhoods in my purview, such as Spring Garden, Highland Park, and East Little Havana, are known for their historical and multicultural significance. Maritime businesses are located along this region of the river, and I observed several redevelopment projects, completed and ongoing, located in these neighborhoods as well.

Within these areas, I distributed flyers that contained a brief summary about the purpose of the study and key eligibility criteria that I deemed necessary to provide, such as age range (18-59 years old), and length/location of residency (Live within a one-mile radius of the Miami River; Live in your current residence for 5+ years). In addition to flyer distribution, I recruited participants through a snowball sampling approach. Once a participant gave us their consent to participate in the study, I asked that he/she refer me to

other potential participant(s) who might be interested in participating in the study based on the eligibility criteria provided. By the end of June 2021, I had confirmed a total of 4 participants (*see* Table 2-1). All participants reside in the general area of Allapattah along the north bank of the Miami River (*see* Figure 2-4).

Figure 2-4. Participant Study Site Area



The COVID-19 restrictions that were in place at the time limited my ability to engage in frequent and in-person interactions with the participants; however, I still attempted to build a relationship with each of them individually. I was in frequent contact with the participants through emails, phone calls, and text messages throughout the study. Building rapport with the participants proved to be a vital component of the entire

research process as the trust and comfort that is established between the researcher and the participant allows for the flourishment of rich and nuanced information.

Table 2-1. Demographic profile of participants	
Gender	
Female	2
Male	2
Age (years)	
20-29	1
30-39	0
40-49	2
50-59	1
Length of Residency	
0-2 years	0
3-9 years	0
10-29 years	3
30 years or more	1
List of Occupations	Sales Representative
	High School Teacher
	Housekeeper
	Unemployed

Participation in this study, and an integral component of the photovoice process, meant that participants were required to attend a photovoice training workshop. The purpose of this workshop was twofold: (1) to gather participants so that they can get to know one another and (2) to introduce the process of the photovoice method in a group setting. Normally, photovoice training workshops are facilitated in person, but, due to the COVID-19 pandemic, the training workshop was facilitated remotely through Zoom, a teleconferencing tool. The photovoice training workshop was held during January 2022. The workshop lasted 75 minutes and it focused on four objectives:

(1) An introduction to the use of photovoice and the overall nature of the project,

(2) ethics to consider when taking photographs,

(3) basic photography techniques

(4) how to write a caption.

Two caption writing exercises were given and completed in a group setting. At the end of the workshop, I asked participants to complete a short five question quiz to verify that they understood the material presented to them. Once participants earned a passing score, no additional training was needed. Before participants were dismissed, I provided take home material, written in English, and translated in Spanish, that summarized the material presented in the workshop. The take home material included guiding questions that I thought could aid participants in thinking about what they wanted me to know about the river. The guiding questions were broad enough to allow for flexibility but not too narrow that it stifles creativity (Vitous & Zarger, 2020).

Once photographs were taken, individual meetings were set up with each participant. During these meetings, I conducted semi-structured interviews where I discussed the purpose and meaning behind the photographs that they took and the values and concerns that they have for the Miami River and neighborhoods that surround it. I adopted several of the interview questions from an interview protocol developed by Davenport & Anderson (2004) and tailored it to our study site. The interviews were audio-recorded, conducted via Zoom, and lasted from 60-80 minutes.

2.4.2 DATA ANALYSIS

Analysis of the semi-structured interviews, meeting notes, and photos was carried out by hand and by using qualitative data software, QDA Miner Lite (version 2.0.8). According to Braun & Clarke (2006), thematic analysis is a method for analyzing qualitative data that entails searching across data sets to identify, analyze and report

repeated patterns. Thematic analysis is a method that describes data, but it also involves interpretation in the processes of generating codes and developing themes (Kiger & Varpio, 2020; Nowell et al., 2017). My analytical process was guided by a social constructivist orientation which identifies the social, cultural, and structural contexts that influence an individual's experience. The development of knowledge that is constructed between the researcher and the participant can illustrate how meanings are socially constructed (Braun & Clarke, 2006).

With this orientation guiding my analysis, the inductive thematic analysis approach aims to uncover the variety of place meanings that the participants attribute to the Miami River and the possible external factors that reconstruct these meanings over time (Sack, 1992; Cheng et al., 2003). Braun & Clarke (2006) and Lochmiller (2021) outlined six steps that help guide researchers using thematic analysis as a research method. Lochmiller (2021) modified the third step to "second cycle coding", which reconfigures and reorganizes first cycle codes into a smaller and more select list of broader sub-themes. Though these two processes informed much of our own, I modified the process and added additional steps to accommodate for text and visual analysis (*see* Table 2-2).

Table 2-2. Thematic analysis adaptation for text & visual analysis
Step 1: Familiarize self with the data by reading interview several times
Step 2.1: Memo (journal) reflections of text data
Step 2.2: Analyze visual data using analysis questions*
Step 2.3: Generate initial codes for both text and visual data
Step 3: Second cycle coding (for both text AND visual data) using axial coding technique
Step 4: Review themes
Step 5: Name themes
Step 6: Write report

Note: The step-by-step-analysis process was adopted from similar processes by Braun & Clarke (2006) and Lochmiller (2021).
*see Appendix for visual data analysis questions

2.4.3 DATA VALIDITY

To establish trustworthiness of the data, I adopted two procedures using the widely accepted and recognizable criteria introduced by Lincoln and Guba (1985) for qualitative research. First, I created an audit trail. According to Koch (1994), an audit trail provides readers with evidence of the decisions and choices made by the researcher regarding theoretical and methodological decisions throughout the study. An audit trail is useful in providing a clear decision trail in the case that another researcher wishes to replicate the study or cross-reference data findings. Audit trails keep records of raw data, field notes, transcripts, and a reflexive journal. My audit trail included several records such as transcripts, field notes (from interviews and MRC public meetings), list of preliminary codes generated throughout the analytical process, and analytical memos about the interviews and field notes.

As part of the audit trail, I also kept a reflexive journal. Qualitative researchers are encouraged to record and log their internal and external dialogue about the research process (Tobin & Begley, 2004). Reflexive journals help qualitative researchers keep a self-critical account of their personal reflections, insights, and interests about the data as well as documenting the daily logistics of the research process (Lincoln & Guba, 1985). In my reflexive journal, I adopted journal prompts developed by Corbin & Strauss (2008) to help organize my reflections and insights about emerging patterns within the data. It included questions such: (1) What are your initial thoughts about the interview? (2) What

were your impressions about the interview? (3) What emerging themes or patterns do you see? (4) Provide a list of initial codes from the interview. Ultimately, the steps taken to establish trustworthiness of the research findings also helped ease the reporting process of the findings.

2.5 RESULTS

In this section, the spectrum of river meanings that emerged in the study is described first. The themes are divided diagonally to represent different themes for the Miami River and the neighborhood of Allapattah along the river's north bank. Themes are paralleled against each other to highlight the values and concerns that participants had about the river and the neighborhood. Excerpts will include descriptive words or statements that our participants used to describe the Miami River and the Allapattah neighborhood. Lastly, photographs and illustrative quotes are presented to demonstrate how river and neighborhood meanings have been reconstructed overtime.

2.5.1 ALLAPATTAH AND MIAMI RIVER MEANINGS

Participants' connections to the Miami River and Allapattah are diverse and converge along four dimensions (*see* Figure 2-5): the river as multifarious and challenging and Allapattah as dwelling and gentrified. When asked, "What are two things that attracted you to move to this neighborhood?" and "What does the Miami River mean to you?", some participants expressed these meanings through storytelling, by the use of rich metaphors and detailed imagery. Others expressed ambivalent meanings that indicated no strong emotional connection or attachment to either the Miami River or Allapattah. The narratives indicate that participants have diverse meanings for both the Miami River and Allapattah. The Miami River was described as "espectacular", "muy

linda", "scary", "very dark, very muddy, very foggy", "una Pachanga all the time", "la naturaleza en medio de la cuidad", "the artery of the city", "the soul of the city", "magical", and "haphazardous". The neighborhood of Allapatah was described as "mi pedacito", "historical", "tranquilo", "seguro", "muy bonito", "chill", "demasiada gente, carros, y edificios", and "gentrified".

Figure 2-5. Web of Miami River and Allapattah Meanings. Ovals colored blue represent values and concerns for the Miami River. Ovals colored green represent values and concerns for Allapattah.

The Miami River as multifarious illustrates the extraordinary resources and elements-historical, cultural, economic, environmental, spiritual, and recreational- that brings people together to this unique waterway. The benefits of these resources and elements span from an individual basis to the City of Miami. During the interview session, Participant One expressed what drew him to the Miami River. For most of his

life, he was looking to live somewhere that embodied some of the core values that he holds dear such as the natural, multicultural, and historical dimensions of a neighborhood. He felt that the Miami River embodied these elements, and they are what drew him to live next to the river:

"There's a connection to the elements that this river represents. So, there's a lot of good memories. And that's what I've been looking for my whole life. My whole life I've been looking to find that place where I am connected to these elements, and this is it."

Almost all of our participants expressed access to the river being important for them whether it be for recreational or therapeutic purposes. Participant Two described how calming it was to simply sit by the river:

"Mira, me gusta porque en aquellos hace más de 10 años tú caminabas y te ibas caminando cerca del río y ahí te sentabas. Ahí era tranquilo. Ahí la gente iba a pescar y tú te sentabas ahí y estabas tranquilo viendo."

Participant Three explained how important access to a green/blue space is for an individual, especially when options are limited when one is living in an urban city:

"Para mi, personalmente significa que la naturaleza que la tenemos aquí, en medio del de la ciudad, es algo lindo que puedes ver y que te sientes tranquilo y relajado sabiendo que tienes esa área natural y verde alrededor del río. Para mí eso es importante, tener algo así bonito lo que es la ciudad, en medio de la ciudad."

Figure 2-6. Photo of bench at Sewell Park, located in East Little Havana, Miami, FL. This photo was taken by Participant Three.

Figure 2-7. Photo of tug boats on the Miami River. *Participant One explains:* "*The Miami River in its entirety is designated under law (CFR § 165.726) to be a working port. Her waters are worked by men and women of utmost competency and dedication. They go out and return in all weathers, whether fishermen, tug captains, or charter captains. They go out when others can choose not to. They have little choice but to "get the job done." Their work feeds our local economy with billions of dollars. And they do it with the utmost respect for the environment and properties of others. I share this picture because it shows the power, the challenge, and the elements these tug operators work with. The power of their machines against the power of wind and tides, the challenge to move large vessels in and out with surgical precision between other ships, bridges, decks, and docks. It shows the elements of fog obscuring visibility."*

As for the community and the city, Participant One called it “the artery of the city”. He also captured the individuals at work on the river (*see* Figure 2-7)

Interestingly, when I asked, “What does the Miami River mean to you?” Participants Two and Three both interpreted the question as what the Miami River means to the city. Both gave similar answers and highlighted the Miami River bringing in revenue from tourism, commercial, and international trade. This finding illustrates how the participants recognize the crucial role that the river plays for Miami as a whole.

A set of questions on River Challenges establishes the ongoing issues that the river faces today as reported by the four participants. The participants centered on three issues: the disposal of sacrificed animals into the river through the religious practices of Santeria, lack of access to the river, and the proliferation of unlawful charter boat operations on the river. Participant Three described her distaste when she would see Santeros throwing sacrificed chickens into the river: “*Yo lo único malo que le mire ahí es cuando te digo que miraba que tiraban las gallinas ahí*”. Regarding unlawful charter boat

operations, Participant One explained to us the recurring issue and even mentioned deaths that have occurred from these operations: *"I think like two or three people have died from charter boats already"*. Participant Four described how the layout of his old apartment building, River Landing Apartments, changed when the new River Landing complex was built next door:

"At least for the part that we used to live in, that area, like we were able to go to the side of our apartments or to the side of the other apartments. And we were able to go all the way to the river like we could touch the water if we wanted to. Now, there's just the dock. A big dock with like fancy boats there. It's pretty much blocked almost all the way to where they have the boats parked all the way to 12th avenue. At least that section, my [old] section, is not accessible anymore."

Allapattah as dwelling encompasses the set of meanings and characteristics that our participants used to describe their home, the neighborhood of Allapattah. Allapattah is said to take its name from a Seminole word meaning alligator (Harper, 2010). The area remained largely a place of floods and farms. Today, the neighborhood retains a strong link to its agricultural past, with numerous produce and flower markets flourishing along its main street, NW 17th Avenue (City of Miami, 1992). Some of the participants have established deep roots to this area. For example, upon arriving to Miami from Mexico, Participant Two has lived in the same *pedacito* (the Spanish term for neighborhood block) for 23 years and she's expressed that she doesn't plan on moving any time soon. She described her *pedacito* as *"muy tranquilo"*, a term in Spanish that describes an area to be calm and safe, and even invited others to come and get to know her *pedacito* and the community members that live on it.

Participant Three and Four moved to a different neighborhood in 2014, but eventually came back to Allapattah expressing that they valued the proximity of amenities and *"la tranquilidad y seguridad"* of the area. Participant One has lived in many different neighborhoods of Miami, including Doral and Miami Shores, but was ultimately drawn to the Allapattah because of the historical aspect that characterizes the neighborhood. When explaining to us his decision-making, he expressed:

"We used to ride my bicycle down here to where I felt like life is real. So there's history here, you know, I can walk over the street over here and I can meet... The first person I ever met here eight years ago still sits on his front porch. There's history here, there's duration, I mean, a lot of Miami is transient, but there are people with roots here and these buildings are old here. So, I wanted to live somewhere that had some history to it."

Participants Two, Three, and Four all described a sense of belonging to their community. What struck us about this theme was the way this "sense of belonging" was demonstrated. All three participants described how small their community was and how everyone knew each other without actually speaking to one another. As elegantly summarized by Participant Two, she described her sense of belonging to her *pedacito*: "*Tu salías y nos conocíamos casi todo el mundo nos conocimos, no nos hablamos, pero nos conocíamos*".

Gentrification of Allapattah was perhaps the broadest category in the analysis. I defined this theme as the process of the changing character of Allapattah through the influx of more affluent individuals moving in, improving housing, attracting new businesses, and typically displacing current inhabitants. All of thr participants were aware

of how Allapattah is becoming more gentrified. Participant Four shared this photograph to highlight the juxtaposition between his old river landing apartment where he used to live in before he moved in 2014 and the new river landing apartment that opened in 2019.

Figure 2-8. River Landing residential and commercial complex towering over old River Landing apartments. Participant Four used to live in the old River Landing apartments.

Participant Two expressed why she stopped walking around her neighborhood:

"Mira, yo en mi tiempo libre yo camino. Tenía mi mascota y yo todas las tardes salía a caminar alrededor. Ahora ya no tanto porque se murió, verdad? Pero ya vi que todo esto creció porque antes no había tanto edificio, tanta construcción y ahora hay demasiadas construcciones por donde tú quieras. Antes esto era tranquilo, ahora ya no está demasiado poblado ya para cuando yo llegué a este pedazo."

In relation to what Participant Two described as *demasiado poblado*, Participant Four described the physical characteristics of these "newcomers" in his neighborhood:

"I guess now, like newer, more rich people are passing by… I can't tell if they're tourists, but I know they're not from here and I don't know if they're from the richer parts of Miami, like Star Island or Coral Gables or something. They're people that I don't really interact with often, but they do look like they're not like from the hood [laughs]."

Gentrification typically displaces current inhabitants and Participants Two and Four both mentioned experiencing this prior to moving to the old River Landing Apartments. Participant Two recalls upon her arrival from Dallas to Miami that she lived in a building with her sister and her husband for two years and *"ese edificio lo remodelaron. Nos sacaron a todos de ahi"*. Participant Four, in agreeance, added, *"Yeah. That's why we ended up moving [to the old River Landing Apartments]. It was mostly because we were getting kicked out.*"

Figure 2-9. A piece of my childhood. *Participant Four explains: "This is a photo of the pool I once enjoyed years ago in a small apartment complex beside the Miami River. Now in present time there is a yacht parked a few feet away. This photo represents a big piece of my childhood where I could enjoy my days in the pool waving at the friendly boats that passed by. Being able to live right next to the Miami River was a great privilege. Every year that experience becomes more difficult to attain for the average citizen as it gets more and more expensive. The change that I would urge to do is educate the general public on gentrification and what the average citizen can do and apply to their lives so that they can lessen the negative impacts."*

All four participants are aware that gentrification meant an increase in the cost of living, and it also meant that their areas might get encroached upon by further redevelopment projects. Participant One admitted that he will have to be "chased away" by developers in order to move out: *"I would stay here, I would stay here. I'm going to stay here as long as I can. I know the prices are going up and development is coming. That will chase me away, I won't leave voluntarily"*. Participant Four expressed already feeling "far away" from the city center in comparison to how closer he felt when living in his old apartment that was adjacent to the Miami River.

2.5.2 RECONSTRUCTED PLACE MEANINGS OF EACH PARTICIPANT

For all of the participants, the meanings they ascribed to the Miami River and to Allapattah either evolved or remained constant over time. I found that, despite ascribing negative or ambivalent place meanings to either area, the participants connected to these

areas in some way and these connections did not necessarily have to lead to a strong, lasting connection for them to hold some significance in the participant's life. For example, Participant Two's encounter with the river happened one day when she was walking around her neighborhood with her husband. She found the 17th Avenue bridge, walked across it, and noticed the body of water under the bridge. Her husband explained to her that the body of water was the Miami River. When asked about her first impressions of the river, she expressed:

"Dije ay Dios que grande esto… Esa fue mi primera impresión dije ay, qué miedo! No?... la primera vez miedo y ya después me dio alegría, me gustó, me daba emoción".

We found this evolved place meaning profoundly interesting, given how the Miami River, at first, scared her, and then it transformed to *alegria*:

"Cuando lo vi por primera vez, ay me dio no sé que... Pasé primero por el puente. Ay me dio miedo la primera vez. Te imaginas? Dije 'Qué tal si este puente no es tan seguro y está tan hondo, no?' La primera vez. Ya no, ya después se me hacía bonito porque sabes que me gusta? Cuando pasan los barcos, la lancha o no sé como le llaman. Los botes que pasan ahí con la gente bailando… muy tranquilo… yo no conocía los manatíes y verlos ahí dije 'mira que bonitos, que grande'"

Participant Two appreciates the activity that happens on the river and the wildlife that it attracts. However, when asked if she has ever felt any type of emotional connection to the Miami River, she responded:

"Interviewer: *En tantos años que has vivido aquí, no te has puesto como a pensar si yo tengo como un tipo de conexión con este río o vivir tanto tiempo aquí. Este río significa algo para mí específicamente. Nunca te ha...?*
Participant Two: *No*"

Instead, she explained that she felt *indignacion,* a Spanish term that describes intense anger, because the lifting of the 17th Avenue bridge from the river activity causes heavy traffic congestion on her side of the river. Her *pedacito* follows a similar trajectory in terms of reconstructed place meanings. Prior to the construction of the new River Landing building, that space was formerly known as Mahi Shrine. The Mahi Shrine site was envisioned as a major mixed-used waterfront redevelopment project in the middle section of the river. As outlined by the UIP, the redevelopment of Mahi Shrine was "the single largest development opportunity on the Miami River" (UIP, 2002).

Participant Two described her area as *tranquilo* prior to the construction of River Landing on the Mahi Shrine site. This place meaning changed once construction of River Landing began. When River Landing opened to the public, she noticed the influx of people flowing into her area. The new demographic flowing in would soon change how she felt about how safe and *tranquilo* her *pedacito* was:

"Mira, es que nosotros no salimos tanto, pero no me he enterado yo de cosas que pase aquí en mi pedacito. Gracias a Dios en esta parte. Pero a mí lo que no me siento segura... ya después de las ocho de la noche cierro mi puerta. Antes, no. Antes nos sentábamos hasta las 11 12 [de la noche]. Me llegué a dormir hasta con la puerta abierta. Quiero que tú sepas. Ahora no. Ahora 7, 8, 9, cierro mi puerta. Pero antes no

nos quedábamos tranquilos, sentados. Tu vas caminando al [unintelligible]. Ahora no, ahora como que ya te da medio."

This change in behavior illustrates how Participant Two perceives the changing community cohesion of her *pedacito*, particularly with the influx of a new demographic residing in her area and the completion of the River Landing complex. She expressed that these changes "*[le] quitaron [la] tranquilidad que tenía*".

Participant Four ascribed similar place meanings upon his first encounter with the Miami River. When asked to describe his first impressions of the river, he described it as "scary". He added, *"Like, I don't know. I always had like my respect for the river, and I never got too really close with it. It was very dark, and you really can't tell what's under there."* However, he explained that *"If I could see through the water, I wouldn't be scared".* In addition to this negative place meaning, he described the Miami River as "scary, but it's *una pachanga* all the time". He enlightened us on the connection that he built with the community on the river during his childhood:

"You remember all those boats I was telling you that pass by? The parties? We always had a connection with them. If I was in the park or if I was in the pool, I would always be like, "Hey, what's up man?!" And we were always interacting with everybody that was passing by. It felt cool. Like, we're all part of the same community. Even when I was learning how to drive in the parking lot, where now [River Landing]is at... anybody that would pass by the river, whether it'd be like somebody walking or like the boats passing by it, it always felt like a community.

"La pachanga but you interact with the people. Yeah, and now it seems like I don't have that anymore. Even if I go there, it feels different. When I went to take the pictures like it's just a whole other thing now. I feel like a little bit disconnected. The boats are bigger [laughs]. I feel like they're not like the type to scream at you anymore."

In addition to this disconnection, Participant Two also illustrated how the construction of River Landing on the former Mahi Shrine site impacted him.

Figure 2-10. Greenway of River Landing residential and commercial complex

"Um, I mean, I just see fancy people walking. That's all I see. Yeah, and this is what we kind of used to do as well. But it was like more intimate. It felt more ours. Now, it just feels like it's anybody's or a new group of people… It kind of has the same feeling when there's a new artist who you think is yours and then when they blow up it's like, 'Well...'…Yeah, pretty much. It feels like they just give it away. Which is a cool, I mean, like, we didn't mind it, but it feels weird, a little"

While Participant Four doesn't explicitly state that this new accessibility is a bad outcome, this finding illustrated that a part of him does recognize that the River Landing redevelopment project compromised certain qualities, such as a private space for himself and his community, as a result of more access to the area by other communities.

In contrast to these ambivalent place meanings, Participant One and Three exhibited positive place meanings that have remained strong overtime and that even led to advocacy on behalf of the Miami River. As previously mentioned, Participant Three recalled getting kicked out of the apartments that she used to live in when she moved to Miami from Dallas. Upon looking for a new place to live, she describes some of the qualities that attracted her to residing in the old River Landing apartments:

"…buscando y buscando pudimos encontrar ahí en River Landing y nos encantó ahí porque teníamos una vista al río, tenían una piscina que daba al río y era hermoso. Ahí salíamos todas las tardes sin preocupación de nada, no se miraba vandalismo, ni delincuencia, ni nada de eso. Así que por eso estuvimos viviendo tanto tiempo ahi, porque los niños estaban seguros."

Additionally, she described the neighborhood of Allapattah as *"un vecindario muy tranquilo, muy bonito"*. Participant Three's connection to the river stems from spending time at a park that was adjacent to the river called Sewell Park. Sewell Park is located on the south side of the river, specifically in East Little Havana. She describes bringing her kids to Sewell Park when they were younger and what this place means to her:

"Hay un parque ahí donde yo llevaba a los niños, ahí nos sentábamos ahí en las piedras a ver el agua. Muy lindo… ese es un lugar de recuerdos. Exacto, desde los más bonitos que tengo porque crecieron mis hijos ahí vivimos por tantos años. Y es lo más bonito que he vivido ahí en Miami."

Figure 2-11. 17th avenue bridge from Sewell Park. *Participant Three: "El puente de la 17 avenida en el río de Miami uniendo los dos puntos de la ciudad, North West y Southwest. Comunica calma y desarrollo urbano. Aquí en este parque me la pasaba a gusto y tranquila con mi familia observando los botes que pasaban. Hacíamos bastantes fiestas y eventos en este parque, y hay algo mágico tener el río a un lado.. No cambiaría nada en esta foto."*

Unfortunately, to accommodate her growing family, Participant Three moved from the old River Landing apartments to a house with more space in a different neighborhood. Her time in this new neighborhood would be short-lived; she felt that the area where she relocated to did not offer her the same sense of security that the neighborhood of Allapattah along the Miami River did. Thus, she decided to look for a house that offered the same amount of space in Allapattah and she eventually found one and moved into it with her family. Her current residence is approximately one-quarter of a mile from the river. This new house is her current residence and though she has more living space to

accommodate her family, she had to compromise the close proximity that she once had to the Miami River and to Sewell Park. In addition to the distance from these two places, she also describes how the construction of River Landing at the Mahi Shrine site also had a significant impact on her and how it's construction also blocked access to the river:
"La construcción de ese edificio... Eso fue lo que más me afectó a mí… todo eso nos funciono a nosotros. Ya cuando tumbaron todo, que nos quitaron esa área. Nos quitaron el pedazo que teníamos para caminar y disfrutar. Porque acorralaron todo y ya solo teníamos la banqueta, porque ahorita ya no puedes mirar el río, ya todo está tapado y todo eso lo quitaron, ya seria solo yendo al [Sewell Park] y [River Landing] es donde te puedes acercar un poquito más al rio."

With the construction of River Landing and the greater distance from the Miami River and Sewell Park, Participant Three was given the chance to reflect and express how these changes have impacted her personally. However, I found that despite these factors, her connection to Sewell Park and the Miami River remained strong:
"Pero cuando cruzo por [17th avenue bridge], claro, cuando me toca ir, a mi me gusta observar. Me encanta ver el agua, me gusta observar el río y me vienen mis recuerdos de cuando vivíamos ahi."

Participant One's strong connection to the Miami River started long before he even knew of the river's existence. His deep-rooted connection to water started in his childhood. Overtime, he grew up to love and appreciate marine environments, the rich and diverse Hispanic culture, and his love for history. Participant One has lived in many

different neighborhoods across South Florida, often times finding himself being away from the water. When describing what drew him to live near the Miami River, aside from the historical characteristics that are embedded within the neighborhood of Allapattah, he added that, *"If the river wasn't here, that would not have been. I have to be near the water".*

Figure 2-12. A connection to water. *Participant One: "I moved to the river a decade ago to rediscover a part of myself I had lost over time – a connection to water. I enjoy plying the river's waters by canoe, kayak, and here, by a sailing dinghy. There is something about being on the water alone, with nothing but the wind and waves' rhythms to coax out thoughts more clearly. I shared this picture because it juxtaposes the complementary yet contradictory elements of our river – the old and natural with the new and mechanized. The river has always been a means of work - at one time, a source of fish and other materials to sustain life, more recently, a route for transportation of goods to be traded from one country to another."*

He described his first time ‘experiencing’ the Miami River and when his love affair with the river began:

“I would say my love affair with the Miami River began fifteen years ago… The first time that I think that the first time I actually remember that experiencing the Miami River it was probably 15 years ago when I took my son canoeing on the [Miami] river. I lived in Doral, and we brought the canoe right there, dropped it in right over here at the end of this park, and canoed all the way up to Le Jeune and I remember being mystified. I remember seeing all the old boats and fishing boats and going, ‘Wow, this is amazing. I never knew all this existed.’”

This first encounter would soon solidify his decision to live next to the river. Realizing his fondness of the river also meant that he would take notice of how certain individuals treat the river. Before COVID, he explained how he and several other river residents banded together to advocate on behalf of the Miami River:

“Before COVID, we had a group of 20 people that lived and worked up and down the river and we met on a monthly basis. It's never happened again. We were people that love the river, love our property, and want to see the quality of life on the river maintained.”

However, due to COVID lockdown restrictions, people were looking for other ways to get together outdoors. This led to one of several ongoing and pressing issues of the Miami River: unlawful charter boat operations. Participant One shared his opinions on the matter:

"COVID brought the charter boats. The charter boats and the lack of law enforcement... I think kicked everybody in the gut and said, see, it just doesn't matter because they really are bad. And it's not because you're carrying people up and down the river, it's the manner in which they're doing it. It's the pooping under the trees over there [or] throwing bags of garbage here, plowing up and down the river."

Though this group of river residents doesn't meet on a monthly basis anymore, Participant One explained to us that he is still trying to fight back:

"I'm at the point now where it's like stepping on roaches, you know, you step on one and two more jump out, you know, it's like what can you do? I haven't given up by any means though."

These findings illustrate an instance where advocacy stemmed from several different avenues: a deep connection to water, a love for marine environments, fondness of the historical aspect, and an appreciation for a multicultural environment. The Miami River holds all of these elements, and it brings people together, as Participant Four elegantly phrased it: "*this river is it really is the soul [of the city]. If it's not the soul, it's the bosom. We come and cling to it."*

2.6 DISCUSSION, LIMITATIONS, AND FUTURE RECOMMENDATIONS FOR RESEARCH

Study findings expand on current conceptualizations of sense of place, specifically on the dimension of place meanings. My findings suggest that examining place meanings is crucial to understanding how connections to places are fostered and the factors that can lead that connection to change overtime. Four interlinked Allapattah and

Miami River meanings emerged. These meanings highlight aspects that the participants value or appreciate about Allapattah and the Miami River along with aspects that they disliked and ongoing issues that concerned them.

The Miami River as multifarious illustrates the extraordinary resources and elements that bring people together to the river and adjacent areas. The participants have demonstrated an appreciation for these elements or resources and have benefitted from them at one point or another. Additionally, a majority are aware of the crucial role that the river plays for the City of Miami. River Challenges establishes the ongoing issues that the river faces today provided by the point of view of the participants. Issues that showed up the most throughout my analysis was the lack of access to the Miami River, the dominance of unlawful charter boat operations on the river, and the disposal of sacrificed animals into the river, known as Santeria.

Allapattah as dwelling encompassed the set of meanings and characteristics that our participants used to describe the neighborhood. All of the participants valued *la tranquilidad* of Allapattah, identifying it as a safe neighborhood with a rich historical and multicultural characteristic, and felt a sense of belonging in their *pedacitos.* Gentrification of Allapattah illustrated the changing character of Allapattah through the influx of more affluent individuals moving in, attracting new businesses, and displacing current inhabitants. All participants observed how the neighborhood has changed over the years and expressed how gentrification has affected them personally.

In the previous chapter, I illustrated how several authors argued that more focus has been placed on the positive affective bonds to places. As a result, little is known about how negative or ambivalent feelings contribute to place meanings. My findings fill

in this gap in the literature. Within the sample, Participant Two and Four both demonstrated ambivalent or negative feelings towards the Miami River. Participant Four expressed negative feelings about the Miami River and how fear of the river eventually transformed into respect for it. Hence, he explained how his fear and respect is why he *"never really got close with [the Miami River]"*. While that respect and fear of the river persists today, I was still able to identify a connection to the Miami River, but not the physical river per se. Rather, I identified a connection to the community that uses the river: "*La pachanga but you interact with the people".* This connection is something that Participant Four truly valued because it instilled a sense of belonging, hence, describing it as *"it always felt like a community".* Though this connection has now been severed possibly due to the lack of access to the river and the different community that uses the river now, the negative feelings that he has about the river did not interfere with the connection that he had with the river community in the past.

Participant Two, at first, expressed negative feelings about the river, but as she got to know her *pedacito* and the Miami River overtime, those negative feelings turned into appreciation. Interestingly, despite this change in feelings, Participant Two does not hold a strong connection to the Miami River. Instead, I found that she has a strong connection to her *pedacito*. One possible explanation for this strong connection could be because of the many years that she has lived in her current residence. While introducing herself to us during the interview session, she explained how she lived in her *pueblo* in Mexico for 24 years before deciding to come to Miami. Upon arriving, others from her *pueblo* chose the area where she currently lives to settle down. She explained that some of these individuals moved to other neighborhoods and cities across South Florida, yet

she remained in the same place where she arrived 23 years ago. This behavior indicates that once Participant Two establishes herself to an area, it is difficult to convince her or entice her to move. Additionally, Participant Two expressed no emotional connection to the Miami River, yet I still identified a degree of appreciation of the river and the activity it attracts despite it not manifesting into a strong connection. These findings expand on knowledge examining how negative or ambivalent place meanings contribute to developing an attachment. My findings also illustrated how positive place meanings remained strong overtime and how they even fostered place-protective behavior of the Miami River.

Participant One was the only participant in our sample that demonstrated this behavior. I had previously mentioned in this chapter that I attended several MRC public hearings. During one public hearing, Participant One lead the discussion of the unlawful operation of charter boats, violation of speed and wake laws, and noise ordinances. He spoke on behalf of river residents who share the same concerns that he has and spoke about the issues that they confront on a daily basis because of these ongoing issues. In addition to leading a discussion at a MRC public meeting, Participant One sends out monthly emails titled “River Matters”, which provide updates on news and issues related to the Miami River. These emails include redevelopment projects and zoning ordinances that are on the MRC’s agenda, volunteering events on the river, and invitations to paddling events (led by Participant One) along different sections of the river. Through these encounters and efforts, we observed how deep Participant One’s love and appreciation for the Miami River runs.

A connection to the Miami River that doesn't lead to advocacy does not mean that it isn't a strong connection. Participant Three's connection to the Miami River, and specifically to Sewell Park, remains strong despite having to relocate to a different physical residence away from the park and the Miami River. Relocating to a new house in the same neighborhood to accommodate for her growing family meant that the close proximity to the river and park would be compromised. However, Participant Three expressed how fond she is of the two places for being safe spaces to raise her children. Her children have all grown up and, in addition to the greater distance to these places, she might be constrained by time and other daily priorities that prevent her from visiting Sewell Park and the Miami River. Yet, she'll always stop to reminiscence these *recuerdos lindos* whenever she gets the chance to pass by these areas.

Perhaps the most important recommendation from this study for SES researchers is the utility of photovoice to uncover and include the unseen voices of the community in key discussions and debates. In my study, I utilized photovoice as a means to uncover how place meanings are reconstructed over time. Additionally, I wanted to provide the participants a greater role in the research process, and I felt that photovoice could help accomplish this goal. My findings have demonstrated that photovoice can serve as an intuitive, rich, and flexible tool that engaged our participants to share their values and experiences regarding social-ecological change of the Miami River and the neighborhood of Allapattah.

In my experience, the use of photovoice assisted in a similar manner as compared to Masterson et al. (2018); photovoice served as a scoping tool that explored place-based connections of the Miami River and Allapattah, while taking an inventory of how or what

exactly catalyzed a change in the connection. The insights that were gained from the discussions of the photographs that were taken by these participants are rich, diverse, and helped uncover issues that were beyond the purview of the researcher. Despite Participant One's connection to the Miami River leading to advocacy, my findings showed that Participant Two, Three, and Four expressed a wide range of place meanings that are ascribed to both the Miami River and Allapattah that did not necessarily lead to advocacy. In light of these findings, I conclude that not all connections have led to advocacy or protective behaviors of places. However, this does not mean that these individuals do not have anything to contribute to discussions regarding Miami River or Allapattah issues. By using photovoice, the safe space that I provided to the participants to speak about their views and opinions allowed for reflections and free flowing discussions to flourish. The flexibility that I provided regarding the types of photos that participants can take allowed them to be as creative as they wanted to be in order to tell a story.

There were limitations and constraints to this study, which should be addressed as the body of literature on incorporating visual methods into environmental research, and specifically SES, expands. The first limitation to consider is the implications of the COVID-19 pandemic on the research design of photovoice. Community-based participatory research (CBPR) approaches, such as photovoice, optimizes engagement between researchers and community members (Wallerstein & Duran, 2006). Unfortunately, methods like these were at a stalemate during the COVID-19 pandemic.

SARS-COV-2, known as the novel corona virus and COVID-19, has caused a worldwide pandemic of respiratory illness, and has infected over 600 million people,

killing 6,494,905 at the time of this writing (John Hopkins Medicine, 2022). Photovoice relies heavily on rapport building and personal interactions between researchers and community members. Such in-person activities were difficult to practice during the COVID-19 pandemic as public health experts, including the World Health Organization (WHO) and the U.S. Centers of Disease Control (CDC), issued guidelines and restrictions to limit the spread of COVID-19. As a result, the photovoice workshop and interview sessions were forced to shift to a remote setting. I conducted the photovoice training workshop and interview sessions via Zoom. Zoom is an online platform that provides teleconferencing and online chat services through a cloud-base peer-to-peer software platform (www.zoom.us). Zoom was selected because it is the telecommunications interface that is sponsored and supported by the university's informational technology department. Switching to an online platform produced mixed results.

Switching to an online platform removed the relationship and communal building aspect among participants that is integral to the photovoice method. These relationships can develop through regular attendance of photovoice workshops and through the creation of focus groups where participants engaged in group discussions. However, the ability to host focus groups to analyze and codify themes together proved difficult given COVID-19 restrictions. My sample size was relatively small, consisting of only four participants, and thus, made it difficult to create focus groups in addition to the COVID-19 restrictions. During the photovoice training workshop, the participants behaved in a formal manner and rarely interacted with one another. Language could have also presented a barrier to the interaction among participants (2 participants did not speak

English, one participant did not speak Spanish, and one participant was bilingual). Most photovoice workshops hold 3-8 workshops throughout the duration of the project, but because of the time constraints of the project and the COVID-19 restrictions in place at the time, I only held the photovoice training workshop and no other additional workshops. The second limitation to consider is the time commitment required by participants engaging in a photovoice project. I originally had 5 participants volunteering to participate in the study, but one withdrew citing his own daily priorities and time constraints. Although the sample size for this photovoice project was relatively small, I must reiterate that I did not to generalize my findings as my study is an inductive exploratory research study that used a qualitative approach to analyze the data.

There are a few benefits that surfaced because of the small sample size given the research approach that I used. First, the small sample size allotted more time to analyze the data that I gathered in more depth and detail that would not have been possible had I recruited more participants. In other words, more participants meant that I had more data to analyze with less time. The time constraints of the study allowed me *sufficient* time to analyze the data provided from the four participants; however, it would have been difficult to provide the same rich, in-depth, and detailed analyzation for a larger sample size given the time constraints in place for this study. Even though there were only four participants, the data still proved to be rich, and it was analyzed in great depth allowing the research questions and objectives to be comprehensively addressed. Second, the individual interview sessions between myself and the participants compensated for the lack of relationship building between the participants. In the individual interview sessions, I was able to directly ask additional questions to the participants if I needed

clarification on a piece of information that they provided. Often times, these clarifying questions would flourish into deep conversations about the Miami River or Allapattah and the participants would share views, experiences, or opinions that would have otherwise remained dormant if I did not have to opportunity to directly probe the participants. These elements allowed for the rich and nuanced information to be captured as part of the larger dataset that would be analyzed for this study. In light of these challenges and benefits, I found that photovoice proved to be a valuable research tool for examining reconstructed place meanings associated to SES experiencing change.

The modifications mentioned above serve as steppingstones in the virtual adaptation of photovoice. Future studies will continue to expand on the modifications of the photovoice method and will guide researchers through the research design process and help them decide what modifications work best based off their research goals. I urge future researchers who wish to replicate this study to find ways to catalyze rapport building among participants and keep them engaged throughout the research process in a fully online platform. While I was able to build some rapport with participants on an individual basis, I was unable to help catalyze rapport building among the participants. In addition, my sample size was small and there's a possibility that other potential participants with different demographics have different information to contribute that is worth analyzing and presenting.

Therefore, it is critical that future researchers find novel ways to help participants engage with each other in order to uphold the communal aspect that is integral to the photovoice method. We hope that the research presented here will guide others in the future.

2.7 REFERENCES

Anderson, E. P., Jackson, S., Tharme, R. E., Douglas, M., Flotemersch, J. E., Zwarteveen, M., … Arthington, A. H. (2019). Understanding rivers and their social relations: A critical step to advance environmental water management. Wiley Interdisciplinary Reviews: Water, 6(6). doi:10.1002/wat2.1381

Braun V., Clarke. V. (2006). Using thematic analysis in psychology. Qual Rs Psychol. 3(2):77-101.

Cheng, A. S., Kruger, L. E., & Daniels, S. E. (2003). "Place" as an Integrating Concept in Natural Resource Politics: Propositions for a Social Science Research Agenda. Society & Natural Resources, 16(2), 87–104. doi:10.1080/08941920309199

City of Miami. (1992). Miami River master plan: final report, January, 1992. Department of Planning, Building and Zoning.

Cole, D., Pearson, B., McWilliams, J., Perez, R. (2005). Miami River Dredging for Sustainability of a Unique Riverine Environment and an Important Marine Industry. 25th Annual Western Dredging Association Conference. New Orleans, Louisiana.

Corbin, J. (2008). Basics of qualitative research: techniques and procedures for developing grounded theory/Juliet Corbin and Anselm Strauss.—3rd ed.

Daniele, D. B. (2021). Urban Rivers As Social-Ecological Systems: An Examination Of History & Ecology In The Miami River. FIU Electronic Theses and Dissertations.

Davenport, M. A., & Anderson, D. H. (2005). Getting From Sense of Place to Place-Based Management: An Interpretive Investigation of Place Meanings and Perceptions of Landscape Change. Society & Natural Resources, 18(7), 625–641. doi:10.1080/08941920590959613

Drew, S., & Guillemin, M. (2014). From photographs to findings: visual meaning-making and interpretive engagement in the analysis of participant-generated images. Visual Studies, 29(1), 54–67. doi:10.1080/1472586x.2014.862994

Drew, S., & Guillemin, M. (2014). From photographs to findings: visual meaning-making and interpretive engagement in the analysis of participant-generated images. Visual Studies, 29(1), 54–67. doi:10.1080/1472586x.2014.862994

Everard, M., & Moggridge, H. L. (2011). Rediscovering the value of urban rivers. Urban Ecosystems, 15(2), 293–314. doi:10.1007/s11252-011-0174-7

F.S. CHAPTER 163.06

F.S. CHAPTER 163.065

F.S. CHAPTER 163.2517

George, P. 2013. Along the Miami River. Arcadia Publishing. Charleston, South Carolina, United States.

George, P.S. (1996). Miami: The First Hundred Years. South Florida History Magazine: Special Miami Centennial Issue. 24 (2): 23-36

Grand Jury Report (1991). Miami River: Beauty and Beast Firearms Regulation. (Fall 1991). State of Florida State Attorney's Office. Miami-Dade County.

Grand Jury Report (1998). Inquiry Regarding South Florida's Future Water Supply Crisis and the Miami River. (Spring 1998). State of Florida State Attorney's Office. Miami-Dade County.

Harper, D. (2002). Talking about pictures: A case for photo elicitation. Visual Studies, 17(1), 13–26. doi:10.1080/14725860220137345

Jacquet, J. B. and R. C. Stedman. 2013. Perceived impacts from wind farm and natural gas development in Northern Pennsylvania. Rural Sociology 78 (4):450–72. doi:10.1111/ruso.12022

Johns Hopkins Medicine. (2022). COVID-19 dashboard by the center for systems science and engineering. https://coronavirus.jhu.edu/ map.html

Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide No. 131. Medical Teacher, 1–9. doi:10.1080/0142159x.2020.1755030

Koch, T. (1994). Establishing rigour in qualitative research: The decision trail. Journal of Advanced Nursing, 19, 976–986. doi:10.1111/ j.1365-2648.1994.tb01177.x

Lincoln, Y., & Guba, E. G. (1985). Naturalistic inquiry. Newbury Park, CA: Sage.

Lochmiller, C. R. (2021). Conducting Thematic Analysis with Qualitative Data. The Qualitative Report, 26(6), 2029-2044. https://doi.org/10.46743/2160-3715/2021.5008

Manzo, L. C. (2003). Relationships to non-residential places: Towards a reconceptualization of attachment to place. Journal of Environmental Psychology, 23(1), 47–61.

Manzo, L. C. (2005). For better or worse: Exploring multiple dimensions of place meaning. Journal of Environmental Psychology, 25(1), 67–86. doi:10.1016/j.jenvp.2005.01.002

Markley, S.M., Valdes, D.K., Menge, R. (1990). Sanitary sewer contamination of the Miami River. Metro-Dade DERM. Technical Report 90-9. Miami 1990. P.1

Masterson, V. A., Mahajan, S. L., & Tengö, M. (2018). Photovoice for mobilizing insights on human well-being in complex social-ecological systems: case studies from Kenya and South Africa. Ecology and Society, 23(3). doi:10.5751/es-10259-230313

Metropolitan Dade County (Fla). (1962) A planning study of the Miami River. April, 1962. Department of Planning., Project Division.

Miami Herald. (1941). p. 59. Available from NewsBank: Access World News. May 1941. Historical and Current: https://infoweb-newsbank-com.eu1.proxy.openathens.net/apps/news/document-view?p=WORLDNEWS&docref=image/v2%3A114CF48AE24B9638%40WHNPX-15C4036D22F235DE%402430133-15C3ABA9B1FEFF87%4058-15C3ABA9B1FEFF87%40.

Miami Herald. (1960). p. 4. Available from NewsBank: Access World News. January 1960. Historical and Current: https://infowebnewsbank-com.eu1.proxy.openathens.net/apps/news/document-view?p=WORLDNEWS&docref=image/v2%3A114CF48AE24B9638%40WHNPX-15E62CF8D6A28C25%402436940-15E5A051517A892B%403-15E5A051517A892B%40.

Miami River Commission 2021 Annual Report

Miami River Commission 2006 UIP Annual Update Report

Miami River Study Commission Report (1998). "The Miami River: a Call to Action". The Miami River Study Commission. January 1998. P. 3

Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.

Moore, J. (2000). Placing home in context. Journal of Environmental Psychology, 20(3), 207–218.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis. International Journal of Qualitative Methods, 16(1), 160940691773384. doi:10.1177/1609406917733847

Parsons, M.T., Flotemersch, M.C., Reid, J.M. (2016) Monitoring the resilience of rivers as social–ecological systems: a paradigm shift for river assessment in the twenty-frst century. In: Gilvear DA, Greenwood MW, Thoms MC, Wood PA (eds) River science: research and management for the 21st century. Wiley-Blackwell, Chichester, pp 197–220

Sack, R. D. (1992). Place, modernity, and the consumer's world: A relational framework for geographical analysis. Baltimore, MD: Johns Hopkins University Press.

Schönach, P. (2017). River histories: a thematic review. Water History, 9(3), 233–257. doi:10.1007/s12685-016-0188-4

Stedman, R., Beckley, T., Wallace, S., & Ambard, M. (2004). A Picture and 1000 Words: Using Resident-Employed Photography to Understand Attachment to High Amenity Places. Journal of Leisure Research, 36(4), 580–606. doi:10.1080/00222216.2004.11950037

Strauss, A. L. (1987) Qualitative analysis for social scientists. Cambridge: Cambridge University Press

Tobin, G. A., & Begley, C. M. (2004). Methodological rigour within a qualitative framework. Journal of Advanced Nursing, 48, 388–396. doi:10.1111/j.1365-2648.2004.03207.x

Tuan, Y. F. (1977). Space and place: the perspectives of experience. Minnesota: University of Minnesota Press.

Verbrugge, L., Buchecker, M., Garcia, X., Gottwald, S., Müller, S., Præstholm, S., & Stahl Olafsson, A. (2019). Integrating sense of place in planning and management of multifunctional river landscapes: experiences from five European case studies. Sustainability Science. doi:10.1007/s11625-019-00686-9

Vogt, J., & Cortez, C. (2020). Urban Social-Ecological Systems. Reference Module in Earth Systems and Environmental Sciences. doi:10.1016/b978-0-12-409548-9.12458-3

Wallerstein, N. B., & Duran, B. (2006). Using community-based participatory research to address health disparities. Health Promotion Practice, 7(3), 312–323.

Yates, L. 2010. “The Story They Want to Tell, and the Visual Story as Evidence: Young People, Research Authority and Research Purposes in the Education and Health Domains.” Visual Studies 25 (3): 280–291.

Yeakley, A.J., Ervin, D., Chang, H. (2016). Ecosystem services of streams and rivers. In: Gilvear D, Greenwood M, Thoms M, Wood P (eds) River science: research and management for the 21st century. Wiley-Blackwell, Chichester, pp 335–352

CONCLUSION

The concept of sense of place has given individuals and communities the opportunity to reflect on their emotional relationship to the environment. Photovoice provides participants the flexibility to produce photographs that depict the values or concerns that they may have about the phenomena or surrounding that they encounter throughout their daily lives. The Miami River is a compelling urban waterway system where the multiplicity of different services and benefits that it provides is an incredibly crucial and vital component to the fabric of a young and growing metropolitan city like Miami; yet it seems like the majority of Miami's population is unaware of the Miami River's significance to the city.

Through the work of my thesis, I was able to capture the place meanings that participants ascribe to the Miami River and Allapattah. Participants were able to convey their messages through the photographs that they produced and the photographs themselves produced a deeper layer of rich information that otherwise would have laid dormant if a traditional qualitative method was used. Literature on the Miami River is limited; however, the course is changing, and the work presented in this thesis will serve as a bedrock for the continuous literature and research that will continue on the Miami River.

In chapter one, through a systematically review of how sense of place is utilized within SES research over the last 20 years, the gaps that previous scholars identified needed further addressing. Using Web of Science, I analyzed a sample of 47 articles that utilized sense of place to examine SES experiencing change and found that the sense of

place literature that SES scholars used to inform their theoretical framework further illustrated the complexity and messiness of the sense of place literature itself. Sense of place is a multi-dimensional concept with several interchangeable definitions and SES scholars are still learning how to utilize this concept appropriately, but it can be difficult to do so when the literature itself lacks unification. This result was not surprising because I also encountered the complex sense of place literature and it was difficult, and often times overwhelming, to decipher it. Future studies and scholars must be very cautious about how they define and measure sense of place as the lack of clarity can unintentionally contribute to the messy literature of sense of place.

Additionally, the review also revealed a lack of visual research methods used to capture and examine dimensions of sense of place, specifically the photovoice method. The results of chapter one led me to pilot a case study using the concept of sense of place and the photovoice method within a dynamic SES such as the Miami River during a time where in-person interactions were extremely limited due to COVID-19 restrictions. While COVID-19 presented challenges that impacted our ability to provide participants a greater role in the research process, the complimentary nature of sense of place and photovoice proved to be practical conceptual and methodological tools to capture ambivalent, negative, or positive place meanings.

My findings indicated that, despite negative or ambivalent place meanings, participants were still able to connect and appreciate their neighborhood of Allapattah and the Miami River. Photovoice provided a space for our participants to express their perspectives and opinions about their changing environment. Through this research and

writing process, I was deeply moved by how individuals intimately connect to their environments. This emotional connection, as mentioned in chapter one, has been overlooked in SES research. Though that is slowly changing, this area of research will continue to expand as humanity continues to adapt to the rapid environmental changes that we are confronted with every day. I hope that the results from this work using can be used in future studies to further amplify the voices of community members who wish to share their opinions and thoughts in cases where they are unable to.

APPENDIX

Interview Protocol for Miami River Interviewees [ENGLISH VERSION]

Make sure the interviewee has given you the information needed from the demographic questions before starting the interview or ask these questions before starting your recording.

Demographics Interviewer will have interviewee fill out/respond to BEFORE interview commences:

Please answer these few questions so in our research we can do some comparisons among interviewees:

How do you identify in terms of gender? ____

What ethnicity do you identify yourself as? Select one or several: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, Hispanic or Latino, Not Hispanic or Latino

What is your current age in years? _____

Length of residency in years (living in Miami) ____

Occupation: _____

Informed Consent (Read to respondent but do not record):

"You are being asked to participate in a study that will examine your values and concerns regarding the Miami River. When I say, "values and concerns", I'm referring to your feelings about the Miami River. For example, I would like to know what you love the most about the Miami River, what do you hate about It, or if there is anything going on around the Miami River that concerns you. I want to make sure that you understand this interview is only about your feelings about the Miami River and anything going on around the river that concerns you. OK? [Wait for response. If need to clarify more, clarify] Great. Today you will be interviewed, and your information will be recorded but your identity will remain confidential. To guarantee this, I will use the pseudonym given to you and I will only use your first name If you give me permission to do so. Do I have your permission to use your first name? [If permission Is not granted, then use pseudonym. If permission granted, then use first name.] Thank you, [first name or pseudonym], your participation is voluntary so you can ask to stop the interview at any time. The information you provide will be used by myself and Dr. Elizabeth Anderson. Is this your understanding of the research? [Have interviewee speak response.] And are you willing to be interviewed and to

have this interview audio-recorded? [Have interviewee speak response]. Thank you. Also, to make sure it is also confidential for others, please do not name anyone fully. You can use the first name but try not to use first and last names. OK? [Have interviewee speak response]

Ask demographic questions here if you have not yet obtained this information.

"Now I'm going to start the actual interview and record it." [**Record YOUR FULL NAME, the date, time and place of the interview. State the interviewee's pseudonym OR FIRST NAME (if permission granted, age, gender, and occupation.]** "[Interviewee's pseudonym or first name] *has been read the study's informed consent and has agreed to be interviewed and to have the interview recorded. Is this correct?* [Have interviewee speak response]. *Let me just make sure we are recording correctly."* [CHECK that your device is recording!!]

"For the rest of this interview it's important for this research that you give in-depth answers as much as possible. There are no right or wrong answers as this interview is about your feelings and concerns. So just be honest and provide as much detail as you can. OK?"

Rapport Building Question

"Tell me a little bit about yourself. Where did you grow up?"

"What do you do during your down time? Do you have any hobbies that you would like to share with me?"

"How long you've lived in Miami for?"

a. *Possible probing questions:*

"Have you lived in Miami your whole life?"

[If NO] "Did you move from another state or country?"

"How long have you been living in this neighborhood?"

"What are two things that attracted you to move to this neighborhood?"

"Can you tell me one thing that you like and dislike about living along or near the Miami River and the adjacent area?"

"If you had the chance, would you ever move from this area?"

Warm-up Questions

"Thank you for your answers. I'm going to switch gears and talk about the Miami River now. How did you first hear about the Miami River?"

"What were your impressions of the river when you first encountered it? How would you describe the area/scene?"

"How would you describe the Miami River to someone who has never seen it?"

"You've been familiar with the Miami River since XXXX. Do you have any special memories or experiences that you'd like to share that are tied to the Miami River?"

a. *Possible probing questions:*

"What made that event stick out more to you?"

"Can you elaborate a little more on what you mean when you say _____?"

"You mentioned _____. Can you explain that interaction a little more?"

"Do you take part in any activities that take place on the river or along it? For example, boating, kayaking, or simply walking along the greenway?"

Grand Tour Question & probes

"This is the most important question in the entire research project so try to answer as fully as you can. Think about the Miami River and what you value the most about it. What does the Miami River mean to you?"

a. *Possible probing questions:*

"Let's explore that a little more."

"Have you met others who share these same values and concerns as you? Would you like to tell me a little bit about them?"

"Can you elaborate a little more on what you mean when you say _____?"

*"What are two things that you **dislike** about the Miami River?"*

"Thanks. "So, you've been familiar with the Miami River since XXXX. What are some of the three major changes that you've observed since you were first introduced to the river?"

a. *Possible probing questions:*

"You mentioned _____. Can you explain that a little more?"

"How did that change make you feel?"

"What made that change stick out more to you?"

"What impact do these changes have on you personally?"

"Thank you. Now, I'd like to look at the pictures that you took and have you talk about them with me. For example, you could explain why you took each photo and what it means to you. OK? Once again, there are no right or wrong answers. I'm not looking for anything specific, but I do appreciate if you provide In-depth answers as much as possible. OK? [Have interviewee speak response]

a. "Which picture would you like to begin with?"
    a. Possible probing questions:
    "You mentioned _____. Can you explain that interaction a little more?"
    "Why does that experience stand out in your mind?"
    "Let's explore that a little more."
    "What does _____ mean to you?"
    "Can you elaborate a little more on what you mean when you say _____?"
    "What impact do these experiences have on you personally?"
    "Could you run that one by me again? I am afraid I still don't understand"
    "Then what?"
    "Was that before or after X?"

Final Questions

"Thank you for all the information that you have provided. We are just about to finish. I have two final questions for you. Suppose that you have power over the future of the Miami River and the surrounding area and neighborhoods. What would you do with your powers and why?" [if participant does not understand question or is having difficulty, use]
"In other words, what changes to the Miami River would you like to see happen in the coming years if you were given the power to make those changes happen?"

"Thank you for your response. Is there anything else you think I should know that we have not covered? Perhaps our conversation has brought something else to mind? If so, please let me know now before we end the interview."

CONCLUSION:
"Thank you for participating in this research. I wish to remind you that all your information will be kept confidential. Do you have any questions before we end? [Wait for response.] Should you have any questions at all, please contact me or the principal investigator, Dr. Elizabeth Anderson of the Earth and Environment department at FIU."

Protocolo de entrevista para el proyecto, Sentido de Lugar: Río Miami [SPANISH VERSION]

Asegúrese que el entrevistado le haya dado la información necesaria para las preguntas demográficas antes de comenzar la entrevista o que responda estas preguntas antes de comenzar la grabación.

El entrevistador de demografía hará que el entrevistado complete / responda ANTES que comience la entrevista:

Por favor, responda a estas pocas preguntas para que podamos hacer algunas comparaciones entre los entrevistados en nuestra investigación:

¿Cómo te identificas en términos de género? ____

¿Con qué etnia te identificas? Seleccione uno o varios: indio americano o nativo de Alaska, asiático, negro o afroamericano, nativo hawaiano u otro isleño del Pacífico, blanco, hispano o latino, no hispano o latino

¿Cuál es su edad actual en años? ____

Duración de la residencia en Miami en años (viviendo en Miami) ____

Ocupación: __

Consentimiento informado (Leer en voz alta al demandado pero **no registrar):**

"Se les pide que participen en un estudio que examinará sus valores y preocupaciones con respecto al río Miami. Cuando digo "valores y preocupaciones", me refiero a sus sentimientos sobre el río Miami. Por ejemplo, me gustaría saber qué es lo que más te gusta del río Miami, qué odias de él, o si hay algo que sucede alrededor del río Miami que te preocupe. Quiero asegurarme que entiendas que esta entrevista es solo sobre tus sentimientos sobre el río Miami y cualquier cosa que suceda alrededor del río que te preocupe. ¿DE ACUERDO? [Espere la respuesta. Si es necesario aclarar más, aclarar] Genial. Hoy será entrevistada y su información será registrada, pero su identidad permanecerá confidencial. Para garantizar esto, usaré el seudónimo que se le dio y solo usaré su primer nombre si me da permiso para hacerlo. ¿Tengo su permiso para usar su nombre? [Si no se concede el permiso, use el seudónimo. Si se concede el permiso, utilice el nombre.] Gracias, [nombre o seudónimo],su participación es voluntaria por lo que puede solicitar detener la entrevista en cualquier momento. La información que proporcione será utilizada por mí y por la Dra. Elizabeth Anderson. ¿Es esta su comprensión de la investigación? [Espere que el entrevistado responda en voz alta.] ¿Y estás dispuesta a ser

entrevistado y a que esta entrevista sea grabada en audio? [Espere que el entrevistado responda en voz alta]. Gracias. Además, para asegurarse que también sea confidencial para los demás, por favor no nombre a nadie por completo. Puede usar el nombre, pero trate de no usar nombres y apellidos. ¿DE ACUERDO? [Espere que el entrevistado responda en voz alta]

Pregunta sobre demográfía aquí si aún no ha obtenido esta información.

"Ahora voy a comenzar la entrevista real y grabarla". [**Registre SU NOMBRE COMPLETO, la fecha, hora y lugar de la entrevista. Indique el seudónimo o nombre del entrevistado (si se concede permiso, edad, y sexo.]** "[El seudónimo o nombredel entrevistado] ha sido leído el consentimiento informado del estudio y ha aceptado ser entrevistado y que la entrevista sea *grabada. ¿Es esto correcto?* [El entrevistado debe responder en voz alta]. *Permítanme asegurarme de que estamos grabando correctamente".* [¡¡COMPRUEBA que tu dispositivo está grabando!!]

"Para el resto de esta entrevista es importante que des respuestas en profundidad tanto como sea posible. No hay respuestas correctas o incorrectas, ya que esta entrevista trata sobre sus sentimientos y preocupaciones. Así que sé honesto y proporciona tantos detalles como puedas. ¿De acuerdo?"

Pregunta sobre la construcción de la relación
"Cuéntame un poco sobre ti. ¿Dónde creciste?"

"¿Qué haces durante tu tiempo libre? ¿Tienes algún pasatiempo que te gustaría compartir conmigo?"

"¿Cuánto tiempo has vivido en Miami?"
b. Posibles preguntas de sondeo:
"¿Has vivido en Miami toda tu vida?"
[Si NO] "¿Te mudaste de otro estado o país?"
"¿Cuánto tiempo has estado viviendo en este vecindario?"
"¿Cuáles son las dos cosas que te atrajeron a mudarte a este vecindario?"
"¿Puedes decirme una cosa que te guste y no te guste de vivir a lo largo o cerca del río Miami y el área adyacente?"

"Si tuvieras la oportunidad, ¿alguna vez te mudarías de esta área?"

Preguntas de calentamiento
"Gracias por tus respuestas. Voy a cambiar de dirección y hablar sobre el río Miami ahora. ¿Cómo se enteró por primera vez del río Miami?"

"¿Cuáles fueron tus impresiones del río cuando lo encontraste por primera vez? ¿Cómo describirías el área/escena?"

"¿Cómo describirías el río Miami a alguien que nunca lo ha visto?"

"Has estado familiarizado con el río Miami desde XXXX. ¿Tienes algún recuerdo o experiencia especial que te gustaría compartir que esté ligada al río Miami?"

b. Posibles preguntas de sondeo:

"¿Qué hizo que ese evento fuera el más destacado?"

"¿Puedes elaborar un poco más sobre lo que quieres decir cuando dices _____?"

"Mencionaste _____. ¿Puedes explicar un poco más esa interacción?"

"¿Participas en alguna actividad que se realice en el río o a lo largo de él? Por ejemplo, ¿pasear en bote, hacer kayak o simplemente caminar por la vía verde?"

Preguntas y sondas de Grand Tour

"Esta es la pregunta más importante en todo el proyecto de investigación, así que trate de responder lo más completamente posible. Piensa en el río Miami y en lo que más valoras de él. ¿Qué significa el río Miami para ti?"

b. Posibles preguntas de sondeo:

Exploremos eso un poco más. "

"¿Has conocido a otras personas que comparten estos mismos valores y preocupaciones que tú? ¿Te gustaría contarme un poco sobre ellos?"

"¿Puedes elaborar un poco más sobre lo que quieres decir cuando dices _____?"

*"¿Cuáles son dos cosas que no te **gustan** del río Miami?"*

"Gracias. "Entonces, has estado familiarizado con el río Miami desde XXXX. ¿Cuáles son algunos de los tres cambios principales que has observado desde que te introdujeron por primera vez en el río?"

b. Posibles preguntas de sondeo:

"Mencionaste _____. ¿Puedes explicarlo un poco más?"

"¿Cómo te hizo sentir ese cambio?"

"¿Qué hizo que ese cambio fuera el más destacado?"

"¿Qué impacto tienen estos cambios sobre ti personalmente?"

"Gracias. Ahora, me gustaría ver las fotos que tomaste y que hables de ellas conmigo. Por ejemplo, podría explicar por qué tomó cada foto y lo que significa para usted. ¿DE ACUERDO? Una vez más,aquí no hay respuestas correctas o incorrectas. No estoy

buscando nada específico, pero aprecio si proporciona respuestas en profundidad tanto como sea posible. ¿DE ACUERDO? [Haga que el entrevistado hable respuesta]

b. "¿Con qué imagen te gustaría empezar?"
    a. Posibles preguntas de sondeo:
    "Mencionaste _____. ¿Puedes explicar un poco más esa interacción?"
    "¿Por qué esa experiencia se destaca en tu mente?"
    "Exploremos eso un poco más".
    "¿Qué significa _____ para ti?"
    "¿Puedes elaborar un poco más sobre lo que quieres decir cuando dices _____?"
    "¿Qué impacto tienen estas experiencias en ti personalmente?"
    "¿Podrías correr ese por mí de nuevo? Me temo que todavía no entiendo"
    "¿Entonces qué?"
    "¿Fue eso antes o después de X?"

Preguntas finales

"Gracias por toda la información que ha proporcionado. Estamos a punto de terminar. Tengo dos preguntas finales para usted. Supongamos que usted tiene poder sobre el futuro del río Miami y el área circundante con sus vecindarios. ¿Qué harías con tus poderes y por qué?" [si el participante no entiende la pregunta o tiene dificultades, use:] "En otras palabras, ¿qué cambios en el río Miami le gustaría que ocurrieran en los próximos años si se le diera el poder de hacer que esos cambios sucedan?"

"Gracias por su respuesta. ¿Hay algo más que creas que debería saber que no hemos cubierto? ¿Quizás nuestra conversación ha traído algo más a la mente? Si es así, por favor hágamelo saber ahora antes de que terminemos la entrevista".

CONCLUSIÓN:
"Gracias por participar en esta investigación. Deseo recordarle que toda su información se mantendrá confidencial. ¿Tiene alguna pregunta antes de que terminemos? [Espere la respuesta.] Si tiene alguna pregunta, comuníquese conmigo o con la investigadora principal, la Dra. Elizabeth Anderson del departamento de Tierra y Medio Ambiente de FIU".

ANALYSIS QUESTIONS FOR TEXT AND VISUAL DATA

Braun and Clarke (2006)	Lochmiller (2021)
Step 1: Familiarize yourself w/ data	Step 1: Familiarize yourself w/ data
Step 2: Generate initial codes	Step 2: Generate initial codes

Step 3: Search for themes	Step 3: Second cycle coding
Step 4: Review themes	Step 4: Review themes
Step 5: Name themes	Step 5: Name themes
Step 6: Write report	Step 6: Write report

My adaptation for text & visual analysis
Step 1: Familiarize self with the data by reading interview several times
Step 2.1: Memo (journal) reflections of text data
Step 2.2: Analyze visual data using analysis question (for more info, refer to below)
Step 2.3: Generate initial codes for both text and visual data
Step 3: Second cycle coding (for both text AND visual data) using axial coding technique
Step 4: Review themes
Step 5: Name themes
Step 6: Write report

For step 2.1, analytical memo questions for text data are included below adopted from Corbin and Strauss (2008).

What are your initial thoughts about the interview?
What were your impressions about the interview?
What emerging themes or patterns do you see?
Provide a list of initial codes from the interview.

For step 2.2, analytical memo questions for images are included below adopted from Rose's (2012, p. 346) critical visual methodology.

What is being shown?
What are the components of the image?
What key points or ideas are they expressing?
What words is the participant using to describe the experience?
Where is the viewer's eye drawn to in the image and why?
What is the vantage point of the image?
What relationships are established between the components of the image visually?
What use is made of color?
What experiences are being described?
What do the different components of an image signify?
Is there more than one possible interpretation of the image?
Is this a contradictory image?

Additional analysis questions for emerging patterns in data:
What experiences do participants hold in common?
What perspectives are (dis)similar?
Unanticipated insights?