Building a Sense of Place Research Program

A Study of Conservation Volunteers in Scottsdale, Arizona

by

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ABSTRACT

This dissertation addresses empirical, applied, and theoretical issues in the place literature through an ethnographic study of the volunteer stewards in the nonprofit McDowell Sonoran Conservancy (Scottsdale, Arizona).

The first phase of study explores Conservancy stewards' phenomenological place meanings through participant observation, a photovoice protocol (N=18), and life-history interviews (N=53). Findings indicate that being a steward fosters deep, identity-based place meanings within the conservation land (the McDowell Sonoran Preserve) and City of Scottsdale.

The second phase of study measures stewards' psychometric place attachments to the Preserve and broader community using the Place Attachment Inventory (PAI) survey. New stewards' (N=29) PAI scores—collected before attending orientation and one year after—demonstrate a rise in Preserve place attachment and place identity in the first year of service. Established stewards' (N=275) PAI data suggests no correlation between place attachment and volunteer intensity. These findings are complemented by phase I results and suggest that stewards experience a rise in place identity after earning the identity of an environmental steward, regardless of engagement.

The third phase of study experimentally combines the data from established stewards who participated in phase I and II (N=48) to test the hypothesis that those with identity-based place meanings would possess higher place identity scores. Data analysis found no significant differences in place identity scores between those with and without a Predicted High Place Identity. The outcomes of this experiment suggest construct validity issues with the widely used place attachment and place identity constructs.

While it is established that volunteers arrive at an organization with a strong sense of place, this study demonstrates empirically how place attachments increase and place meanings deepen further after joining a volunteer organization. Communities and organizations can learn from the Conservancy's practices that help stewards easily establish and perform a place-based steward identity. Finally, the experimental mixed methods findings suggest a sense of place research program that measures attachment to a place's meanings rather than attachment to a place. This shift will allow place meaning and place attachment to be studied concurrently, advancing the sense of place construct and broader place theory.

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INTRODUCTION

PROBLEM STATEMENT

Sense of place—defined as the attachments and meanings generated in the person-environment interaction (Hummon, 1992)—is increasingly recognized as a contributor to individual and community health (Salovey et al., 2000). Due in part to sprawling metropolitan development and transient residential patterns, residents in the Phoenix, Arizona (USA) metropolitan area lack strong place connections (Roper Center for Public Opinion Research, 2000). Community stakeholders are continually looking for ways to strengthen that bond (Center for the Future of Arizona, 2013). The high population of aging residents—who are more at risk for weak place relationships (Rowles, 1983)—underscores this need for local solutions.

Participation in civic engagement activities such as conservation volunteering is theorized as a contributor to increased sense of place (Beatley, 2005; Bushway, Dickinson, Stedman, Wagenet, & Weinstein, 2011). Empirical studies on the relationship between sense of place and volunteerism have typically focused on sense of place and related constructs (such as *place attachment*) as a precursor to these types of civic engagement, but not as an consequence. Those with higher place attachments in a community (defined as an affect toward a location (Low & Altman, 1992)), for instance, are more likely to engage in pro-environmental behaviors (PEBs) such as conservation volunteering (Buta, Holland, & Kaplanidou, 2010; Larson, Usher, & Chapmon, 2018; Vorkinn & Riese, 2001). Little is known about the relationship between place attachment and conservation volunteering once volunteers' civic engagement has begun.

Empirical understandings of place relationships are hindered by divides across and within disciplines (Lewicka, 2011), leading some scholars to characterize the place literature as chaotic (Jorgensen & Stedman, 2006) and incoherent (Stedman, 2003). The 1990s and 2000s brought an influx of scholarship in the study of place, which introduced a wide array of constructs and methodologies as well as calls for integration of terms and approaches.

Patterson and Williams (2005) attempted to move the discussion beyond arguments over which approach was superior by calling for a *critical pluralist* perspective that encourages scholars to pursue the approach most appropriate to their scholarly worldview, while allowing for "synergistically complementary findings [or] entirely distinct but compatible insights" to develop across approaches (pp. 374-375). This resulted in a more focused empirical literature but inhibited theoretical and methodological growth in the field by discouraging experimentation and integration.

In light of this context, the following section will introduce the tools within the place literature that could help reveal the gaps in the literature and research questions to address those gaps.

PLACE LITERATURE OVERVIEW

Place as a field of study is complex, and can be seen through many different lenses, such as disciplines (e.g. geography, psychology), methodological choices (e.g. qualitative/quantitative), particular terminologies and place subconstructs (e.g. sense of place, place attachment, place meaning), and epistemological and philosophical paradigms (e.g. phenomenology, psychometrics). Patterson and Williams (2005) draw these frameworks together under their multilayer framework of epistemological

macrostructure. This model organizes a variety of place approaches according to three nested dimensions: Research Programs, Paradigms, and World Views.

At the most applied level, research programs are characterized by the scholar's discipline, methodology, and constructs employed in the study of place. Research programs are informed by paradigms, which are characterized by the scholar's philosophical commitments to the nature of the human experience (ontology), the relationship between the researcher and phenomenon (epistemology), and beliefs in the aims of science (axiology)[1]. At the broadest level is the scholar's scientific world view, which dictates how diversity at the paradigm level should be treated. In the sections to follow, I discuss the diversity of thought in place research at each level of the multilayer framework of epistemological macrostructure. This exercise will contextualize the place literature, reveal gaps in understanding, and contextualize the research questions posed for this study.

Research programs. The most significant divide at the Research Program level concerns the scholar's choice of place terminologies/constructs. Is the study exploring sense of place, place attachment, place meaning or another construct? If, for example, the study is exploring place attachment, is it a superordinate construct that includes subconstructs such as place identity, place dependence, or other terms? These choices have a ripple effect on whether the study is methodologically qualitative, quantitative, or mixed.

[1] In its common usage, a *paradigm* is characterized as a way of thinking or, more formally, as the intellectual domains that a scholar works with and within. In the multilayer framework of epistemological macrostructure, paradigm is used much more specifically to define the collection of philosophical underpinnings that guide a research program.

Sense of place and place meaning tend to be studied qualitatively by scholars in geography, philosophy, and anthropology. Place attachment and its many subconstructs tend to be measured quantitatively by scholars in environmental psychology, natural resource management, and natural sciences. Some scholars consider place attachment to be an all-encompassing proxy for the human-environment relationship (Hernández, Hidalgo, & Ruiz, 2013), while others, such as myself, consider it a narrow construct that is defined as an affect toward a location (Low & Altman, 1992; Williams, 2014). This difference makes it difficult to build upon other scholars' work in similar constructs because of disparities in scope and meaning.

Paradigms. A scholar's paradigm determines his/her commitment to how reality is accessed and measured in the course of study, and the scale of applicability of results. As discussed above, a natural division exists within the field of place scholarship that carries across all levels of the multilayer framework of epistemological macrostructure. This is most apparent at the Paradigm level (See Table 1). Many who study holistic sense of place and place meaning—defined as "the symbolic content of experience" (Tafarodi, 2008, p. 29) do so qualitatively from a phenomenological paradigm. This paradigm is committed to defining place as an inseparable human-environment experience (Heidegger, 1962; Merleau-Ponty, 1962). Phenomenological scholars do not believe it possible to extract the person from their environment through object/subject distinction, as human and environment are reciprocally shaping one another (Ingold, 2000; Jackson, 1996).

Many who study operationalized constructs such as place attachment and place identity do so quantitatively from a psychometric paradigm based on attitude theory.

Under this belief system, "place is a hypothetical construct that is not accessible to direct observation, but can be inferred on the basis of measured responses" (Jorgensen & Stedman, 2001, p. 238). From this perspective, place is a constructed in the individual's mind based on his/her positivistic experience (Bruner, 1990). Findings are generalizable, with the goal of understanding a broad, comparable experience.

Table 1

Prominent Place Paradigms and Their Philosophical Commitments

Philosophical Commitment	Psychometrics	Phenomenology
Ontology		
Nature of Reality	Objective	Neither objective nor subjective
Human Experience	Deterministic	Narrative
Human Motive	Rationality	Meaning (unconscious)
Epistemology		
Researcher/phenomenon	Separate	Inseparable
Type of Knowledge	Generalizable	Particularistic
Axiology		
Aims of Science	Predictive	Understanding
Evaluation of Science	Reliable, Valid	Insight

While these two approaches account for significant scholarship, they are not the only means of ontologically, epistemologically, and axiologically approaching the study of place. One notable example is the discourse analysis approach that comes from a cultural constructivist paradigm. Discourse analysis uses qualitative methods to study place attachments and the rich, shared cultural symbols that emerge from analysis of everyday discourse (DiMasso, Dixon, & Durrheim, 2013). While this perspective excels at eliciting knowledge from shared experiences, it places primacy on place attachment. This dissertation focuses on the two most historically important paradigms in an attempt

to address lingering issues in their application and reemphasize place meaning as a foundational aspect of sense of place.

Scientific world views. A scholar's scientific world view is reflected in how he/she treats diversity at the Paradigm level. Phenomenologists have traditionally dismissed quantitative psychometric approaches as "narrow minded" (Peet, 1998) and as an affront to the complexity of the human-environment experience (Seamon, 1987). Scholars employing a psychometric approach critique phenomenology's lack of generalizability and have led the call for phenomenologists to integrate, operationalize, and engage in hypothesis testing (Stedman, 2002, 2003; Shamai, 1991).

As diversity in paradigms and research programs grew in the 1990s and 2000s, scholars increasingly lobbied for their preferred approach. Patterson and Williams (2005) recognized the intractable nature of these arguments and called for place scholars to adopt a critical pluralist scientific world view. This approach is permissive of paradigmatic diversity, so long as scholarship remained consistently dedicated to the paradigms' underlying philosophical commitments.

Under a critical pluralist scientific world view, a cultural geographer can safely study place meaning qualitatively from a phenomenological perspective while an environmental psychologist studies place attachment using a quantitative, psychometric assessment tool. These separate studies may provide results that demonstrate complementarity, but the fundamental incompatibility of their paradigms prevents them from successfully integrating.

In recent years, place scholarship has been more focused on empirical advancements rather than integration. Whether explicitly or implicitly, the tone of the

literature suggests that the critical pluralism scientific world view has been broadly adopted. As a consequence, however, theoretical and methodological advancements in the field have stalled. For example, while sense of place is defined here as attachments and meanings, these constructs are rarely explored within the same study because place attachments are most appropriately studied from a quantitative, psychometric perspective while place meanings are most appropriately studied from a qualitative, phenomenological perspective. Table 2 identifies my position on each construct, how it is defined given that construct's philosophical commitments, and how that construct is most appropriately studied.

Gaps and research questions. The above problem statements and theoretical overview reveal three gaps and corresponding foundational research questions.

1a. Applied gap: Communities—and the Phoenix metropolitan area in particular—want to foster strong place relationships. Civic engagement activities such as conservation volunteerism are a hypothesized solution, but the mechanism by which these activities foster sense of place is unclear.

1b. Applied Research Question: What are the best practices for a conservation volunteer organization to foster sense of place?

2a. Empirical gap: While we know that volunteers arrive at an organization with higher place attachments, we do not know what happens to an individual's place attachments once he/she joins the organization. Similarly, it would be helpful to understand how volunteering affects place meanings within this particular population.

2b. Empirical Research Question: What is the relationship between conservation volunteerism, place attachment, and place meaning once a conservation volunteer joins

Table 2

Place Constructs, Frameworks, and Subconstructs

Construct	*Definition*	*Framework*
I. Sense of Place	Meanings and attachments generated in the person-environment relationship (Hummon, 1992)	Critical Pluralism (Patterson & Williams, 2005)
A. Place Attachment	An "affect toward a location" (Low & Altman, 1992)	Place Attachment Inventory (Williams & Vaske, 2003)
i. Place Dependence	A cognitive belief about a place's functional ability to meet desired needs through engagement in preferred activities (Stokols & Shumaker, 1981)	
ii. Place Identity	A set of cognitions about the physical world that help contribute to a broader self-identity (Proshansky, et al., 1983)	
B. Place Meaning	The "symbolic content of experience" in place (Tafarodi, 2008, p. 29)	Layers of Place Meaning framework (Williams, 2014)
i. Inherent	Meanings derived objectively from the experience of the physical environment	
ii. Instrumental	Meanings that specifically and consciously meet a desired need	
iii. Sociocultural	Shared symbolic meanings enacted through experience and language	
iv. Identity-Expressive	Performative and highly individualistic meanings that contribute to a sense of self	

the organization? How do experiences vary across subpopulations, time, and place scales?

3a. Theoretical/Methodological gap: The broad adoption of the critical pluralist approach to place research has resulted in a lack of theoretical/methodological advancement in place research. As a consequence, we do not understand how place meaning and place attachment are related.

3b. Theoretical/Methodological Research Question: What can we learn from eschewing the conventions of critical pluralism place research and experimentally combining results from phenomenological place meaning data and psychometric place attachment data in the same population?

Evolution of the study. Throughout the study, my focus was on addressing the applied, empirical, and theoretical research gaps. Initially, my focus was geared primarily toward the empirical findings and determining what value this study could add to the understanding of how volunteerism affects place relationships. The preliminary set of guiding research questions included explorations into the experience of a variety of population variables within the volunteer organization—length of time within the organization, age/occupation status, and full time vs. part time residency of volunteers. I also focused on place relationships across geographic scales, such as city and metropolitan area. As the study progressed, my interest in these topics—and the empirical results as a whole—were deprioritized in favor of focusing on the practical and theoretical/methodological contributions of this study. The population variables ended up being less significant than the applied and theoretical results.

At the outset of this study, I did not know how I would combine results derived from seemingly incompatible research paradigms. It was only after analyzing the results and employing a traditional mixed methods complementary approach did I understand how I could combine these previously incompatible research traditions. In fact, at the outset of this study, I was under the impression that experimentally combining phenomenological place meaning results and psychometric place attachment results fell under the purview of critical pluralism. Only after exploring the mixed methods literature more closely did I understand the value of experimental mixed methods *initiation* (Rossman & Wilson, 1985), which will be discussed further in Chapter 4.

STUDY CONTEXT

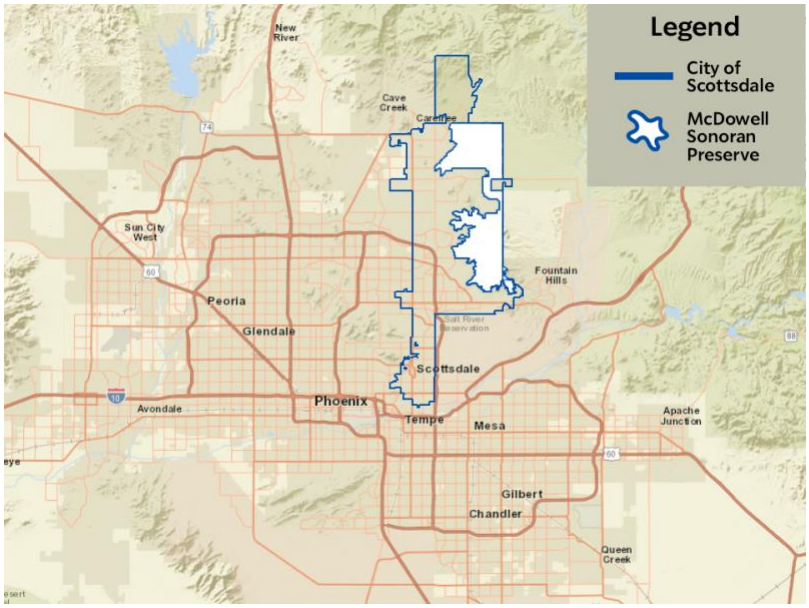
History of the Preserve and Conservancy. This study was undertaken in partnership with the McDowell Sonoran Conservancy (the Conservancy) of Scottsdale, Arizona, USA. The McDowell Sonoran Conservancy is a 501-C3 nonprofit organization established to assist the City of Scottsdale in the management of their McDowell Sonoran Preserve (the Preserve). The Preserve is the largest urban nature preserve in the Americas (Harnik, McCabe, & Hiple, 2017). At over 30,000 acres, the Preserve occupies approximately one quarter of the City of Scottsdale land area and covers a significant portion of the McDowell Mountains in the northeast of the municipality (Figure 1).

The City of Scottsdale (2018 Census population estimate: 255,310) is known as a tourist destination for golfing, luxury resorts, high-end shopping, and outdoor amenities. Despite Scottsdale's farming history, it plays on its cowboy roots with its slogan "The West's Most Western Town". The city is 31 miles from North to South and only 11 miles from East to West at its widest point. While the City of Scottsdale General Plan divides

the city into Character Areas, the common distinction residents make is between North and South Scottsdale. There exists a cultural and socioeconomic distinction between the busy and commercial South Scottsdale and the quiet and residential North Scottsdale, which abuts the Preserve. North Scottsdale is known for its high socioeconomic status and significant population of retirees. The City of Scottsdale is part of the sprawling and growing Phoenix metropolitan area, also known as the Valley of the Sun, or locally, just the Valley.

Figure 1

McDowell Sonoran Preserve and City of Scottsdale Map



Map of the Phoenix Metropolitan Area, with the City of Scottsdale outlined in blue and the McDowell Sonoran Conservancy highlighted in white.

In the 1970s, Scottsdale residents became concerned about encroaching development around the McDowell Mountains. Residents saw nearby mountains such as Phoenix's Camelback Mountain become overrun with housing development and wanted to avoid a similar fate. In 1977 the City of Scottsdale adopted The Hillside Ordinance, a zoning regulation that forbid development above a certain grade of slope. It was ruled unconstitutional by the Arizona Supreme Court in 1986. The nearly decade-long legal battle allowed the city, its residents, the tourism industry, HOA groups, and developers time to organize a plan to—as the community group claimed— "Save Our McDowells".

In 1994 the City of Scottsdale dedicated its first 4.5 mi^2 parcel of land thanks to a unique public-private partnership. The parcel was donated by developers who recognized the value that a Preserve would have for its business. Over the next ten years, residents voted several times to increase sales tax on themselves as well as approve bonds that would allow the city to purchase more land. In 1998 the then-named McDowell Sonoran Land Trust partnered with Scottsdale Community College to establish a volunteer steward program. The economic downturn of the late 2000s enabled the City to purchase more of its targeted land at affordable prices, and the Preserve and its volunteer group began to grow significantly. At the beginning of this study in 2015, the McDowell Sonoran Conservancy reported its approximately 600 stewards contributed over 58,000 volunteer steward hours, valued at over $1.3M to the City of Scottsdale. (See Appendix A for Preserve and Conservancy timeline).

The McDowell Sonoran Conservancy has a small staff of 12 but is primarily characterized by its 600+ volunteer stewards. Stewards join the organization by attending a single six-hour New Steward Orientation (NSO). Orientations are designed by stewards

in the Volunteer Education program in conjunction with Conservancy staff and Preserve managers at the City of Scottsdale. The Orientation introduces stewards to the Preserve, the Conservancy, and the various roles, challenges, and expectations of being a steward. I participated in NSO Class 51 with 15 fellow new stewards on Saturday, March 14th, 2015. We learned about the Conservancy's 10 programs and how we could gain further training to engage in each one. Steward programs at the time included Patrol, Citizen science, Steward Education, Pathfinders, Tour, Construction & Maintenance, Community Relations, Volunteer Support, Nature Guides, Fundraising & Donor Relations, and other organizational roles such as leadership. Each role—and its prominence in the organization—is detailed in Appendix B. Across the years of this study, programs were renamed and reorganized, but the basic functions of the steward roles remained the same.

Population and organizational dynamics. The Conservancy recruits its volunteers primarily through word of mouth, resulting in a demographically homogenous population of aging, primarily retired, white, highly educated individuals (Table 3). There is an approximate gender balance throughout the organization. Twenty-two percent of the surveyed steward population are seasonal residents (also known as snowbirds) who split their time between homes in Arizona and across the United States and Canada. This demographic is similar to the general population of North Scottsdale. For example, the ten zip codes in the northern part of Scottsdale (defined unofficially as North of Shea Blvd) have median household incomes between 86,000 and 122,000, and 19% of households are part-time residences (U.S. Census Bureau, 2017).

The most popular steward activity is Patrol. After attending an additional 1-hour training, the steward participates in patrol by wearing his/her volunteer shirt out on the

trail while hiking, biking, or horseback riding. They greet people on the trail and report any issues via a reporting app or Preserve hotline. This activity accounted for 32% of all volunteer hours in FY 2015. The next most popular activity in 2015 was Citizen Science (17%), where stewards participate as research assistants on university or government-led studies of the Preserve ecosystem.

Table 3

Demographic Profile of Conservancy Stewards (N=314)

Gender	
Male (%)	53
Female (%)	47
Mean Age (years)	64
Residency status	
Year-Round (%)	78
Seasonal (%)	22
Employment status	
Non-Retired (%)	27
Retired (%)	73
Highest Education Level	
High School (%)	9
Bachelors (%)	38
Advanced Degree (%)	53
Mean Residency in Arizona (years)	21
Mean Time in Conservancy (years)	4

Much changed in the organization across the three-year run of the study (March 2015-February 2018). In order to keep up with the growth of the Preserve land itself, the organization wanted to expand its steward population significantly. In the early years of

the Conservancy, new stewards would be inducted on a yearly or bi-annual basis. In the three years of this study, the organization ran approximately 7 NSOs classes per year, with attendance in the range of 15-25 new stewards per class. In interviews, long-time stewards noted that the organization became less personal in this time with so many new faces.

Like most nonprofit organizations, there was also regular staff turnover. The Director at the time left in May 2017. He was replaced on an interim basis with a volunteer steward who had served in many roles, including the top steward role, the Core Leadership Team Chair. This triggered turnover in the volunteer coordinator position as well. By the time my study concluded, nearly all of my initial key informants on staff were out of the organization.

During the Fall 2017 Steward Kickoff, the organization notified stewards that they were experiencing financial troubles. One solution was to more formally spell out for stewards the expectations of their "time, talent, and treasure". These new expectations received a mixed reception, particularly from stewards who relished the relaxed nature of volunteer participation.

During the course of study, the organization experienced significant growth in the McDowell Sonoran Field Institute, which was renamed as the Parsons Field Institute in 2018 after receiving a $600,000 grant from the Bob & Renee Parsons Foundation. Under the leadership of scientist Helen Rowe, the organization had successfully contributed to 17 projects in FY 2018-2019.

Finally, a significant development that occurred during the course of study was the Desert Discovery Center/Desert EDGE controversy. A group, led by some of the

individuals who helped establish the McDowell Sonoran Land Trust, lobbied to build an education center at the main Gateway Trailhead. Proponents argued that an interpretive center was within the original vision of the Preserve, while opponents thought it to be an affront to the spirit of preservation. A feasibility study was approved by Scottsdale City Council. However, before the project could move forward a grassroots citizen's group "No DDC" campaigned to stop the project by collecting signatures to put a measure on the ballot (Proposition 420) that required development other than trails and trailheads on the Preserve to be put to a public vote. In the run-up to the election, the issue "escalated into the city's most divisive political issue over the years" according to the Arizona Republic (Longhi, 2018). Stewards landed on both sides of the issue. The Conservancy declined to take a position, stating that the project may or may not benefit the organization, Preserve, and community. The topic would come up during some interviews about place meaning, but I did not directly target the topic as part of my research and attempted to remain unbiased on the issue when the topic was broached. On November 6th, 2018, the measure passed by a wide margin (71%), effectively killing the project.

Access, positionality, and data quality. I chose the McDowell Sonoran Conservancy because it fit the description of a large conservation organization that had the local reputation of an organization that strengthened place relationships. From the beginning, the organization was very receptive to my work and provided support whenever necessary. In February 2015 I spoke over the phone with the Conservancy's volunteer coordinator, who passed along my interest to the Field Institute manager. The Field Institute manager was familiar with anthropology because she studied it herself as

an undergraduate. This proved helpful in selling the organization on the project. I wrote a short outline of my proposed research project, and sent it to the volunteer leadership group, the Core Leadership Team (CLT). They discussed and approved the project at that month's CLT meeting. I met with the Field Institute manager, a Field Institute science collaborator (who is now the Field Institute Director) on 3/2/15 to collaborate further on the research plan, which was documented and sent for IRB Approval (#2256; Appendix A).

I participated in New Steward Orientation 3/14/15 as well as several role-specific orientations in the following weeks. Across the three years I delivered eight research updates at steward-only events and public events populated by stewards. This included the Field Institute Symposium (10/24/15), the Field Institute update (6/8/16), Steward Kickoff (9/23/16), Mustang Library speaker series (11/22/16), Steward Retreat (1/21/17), Central Arizona Conservation Alliance speaker series (3/23/17), CLT meeting (5/24/17), and Arid Lands Research Symposium (5/4/18). These events allowed me to share my findings as well as let stewards know who I was and what my project was about. It also allowed me to recruit eight fellow stewards to help as citizen science research assistants in data collection and analysis.

Throughout the process, the volunteer coordinator, CLT chair, and Field Institute Director were supportive of and engaged in my endeavor. From the beginning we determined that the study would act as a partnership, and organizational needs would be considered in data collection endeavors such as the all-steward survey. They provided access to the study population frame by sending out messages on my behalf, as well as

space to conduct interviews. Unlike many organizations, a defining characteristic is the organization's openness to innovation. This allowed for a fruitful relationship.

Stewards were almost universally helpful as well. While some were skeptical of social science, this is a highly educated group that were encouraging of gathering data and generous with their participation. I repeatedly heard from stewards how they hoped the Conservancy would gain more recognition as a model for other organizations. This study was seen as one way to contribute to that effort.

As someone in my late 20s/early 30s I did stand out among the crowd of primarily older stewards, but my knowledge of the outdoors and experience working with trail organizations helped to build bonds with participants. As a graduate student and new parent, my schedule didn't always align with the activities of the organization, which catered to the early weekday morning availability of its largely retired population. During interviews, some participants were hesitant to critique the organization if the subject came up, but I attempted to make clear that my research was independent of the organization. Overall, I am confident in the study's data quality.

METHODOLOGICAL OVERVIEW

To answer the research questions detailed on pages 7-8, I executed the following methodologies: participant observation, focus groups, a photovoice protocol, all-steward surveys, new steward pre-post surveys, and life history interviews. An overview of each will be described below with their timeline (Table 4). Several are described in more detail in the main chapters of this document.

Table 4

Project Methodology Timeline

Methodology	Data Collection Period
Participant Observation	March 2015-February 2018
Focus Groups	April 2015
Photovoice	October 2015-April 2016
All Steward Survey	October 2016-December 2016
New Steward Survey Pretests	October 2016-January 2017
Life History Interviews	February 2017-May 2017
New Steward Survey Posttests	October 2017-January 2018

Participant observation. Beginning in March 2015, I participated as a regular new steward. I went through orientation, received a mentor, achieved my first 20 hours to graduate from Steward in Training to steward, attended trainings, and began volunteering in several areas. Over the course of the three years of study I attended all volunteer social events, which included the September kickoff, December holiday party, January steward retreat, and March steward recognition dinner. As the interviewing and analysis project picked up in years two and three, there was less time to engage in the everyday steward activities such as patrol and pathfinding. In hindsight, I wish I had engaged in a greater diversity of activities in the early parts of the study.

In the final year of study a few fellow volunteers and I established the Self Study Task Force, where we applied social science thinking to address organizational needs. In one project I trained a group of stewards to use the MaxQDA+ coding software to analyze the organization's Strategic Plan document. We coded the document's goals and

outcomes in an effort to validate practices and improve processes. This endeavor allowed me to contribute my skillset to the organization in a more immediate and practical way, as well as provide me with insight into the organizational workings of the McDowell Sonoran Conservancy leadership.

Focus groups. Soon after entering the organization in March 2015, I began working with the volunteer coordinator to recruit individuals for a set of focus groups. We advertised in two consecutive weekly volunteer email newsletters and filled out the group with a purposive sample of willing participants with deep knowledge of the Conservancy and Preserve.

The goal of the focus group was to understand the steward experience, build connections with key stakeholders, and begin to understand stewards' place relationships in and out of the Preserve (Appendix C).

Focus groups interviews were recorded, transcribed, and entered into MaxQDA+ text analysis software. I created and assigned inductive codes based on emergent themes. I presented the results—which were informally used to shape future direction of study—at the McDowell Sonoran Field Institute Symposium on 10/24/15. This also allowed me to introduce my study to the community, start a conversation and stewardship and place, and lay the groundwork for recruiting future participants.

Photovoice. In Winter 2015/2016 I recruited a purposive sample of 18 stewards to participate in a photovoice protocol—also known as resident-employed photography. The goal of this endeavor was to understand phenomenological place meanings through the lived experience of stewards in and out of the Preserve.

Participants attended a 90-minute training where they were instructed to take and send me 5 photographs in the Preserve and 5 photographs outside the Preserve of places that were meaningful to them. After 1-2 months, I scheduled an interview with each participant to understand why each place was meaningful, typically in a *walking interview* at one or more of their meaningful locations. Interviews were recording, transcribed, and loaded into MaxQDA+ for text analysis. My research team, which included three ASU undergraduate research assistants, collaborated to build and refine a codebook that included 27 place meaning categories. A complete breakdown of this methodology and its results can be found in Chapter 2.

I shared the results of this methodology with the community in a 3-month photo exhibit at a Scottsdale public library branch. The exhibit was titled "My Pile of Rocks", an homage to a participant who, when asked to be a part of the study, claimed that all her favorite places in the Preserve were just piles of rocks. The exhibit highlighted photographs from all 18 participants across six primary themes (Appendix D). I presented my findings at a Scottsdale Public Library Speaker Series event, which gave me an opportunity to celebrate my participants' work and share my findings with the public.

All steward and new steward surveys. In Fall 2016 I developed a survey to be sent to all stewards via the weekly newsletter. A call for participation appeared for five consecutive weeks, resulting in 275 responses. The survey included the 12-item Place Attachment Inventory (Williams & Vaske, 2003) that assessed participants' place attachments to the McDowell Sonoran Preserve and Phoenix metropolitan area (the Valley). The survey also included demographic questions as well as a set of questions

designed by the organization to gauge their interest in leadership roles in the organization.

Additionally, incoming stewards in the October 2016, November 2016, and December 2017 classes were emailed one week prior to their participation in the New Steward Orientation and asked to take the Place Attachment Inventory survey. Thirty-nine participants were emailed one year after with an identical posttest survey, with most completing the follow-up (N=29). The goal of this pre-post design was to assess changes in place attachments across the first year of service. Both the all steward and new steward surveys were analyzed using SPSS to address how place attachments vary across place scales, volunteer intensity, demographic characteristics, and time. A complete breakdown of this methodology and its results can be found in Chapter 3.

Life history interviews. All Steward Survey participants (N=275) were categorized into nine groups according to their residency/occupation status (full-time resident non-retiree, full-time resident retirees, seasonal resident retirees) and volunteer intensity status (low, medium, high). A stratified random sample was drawn from these groups, resulting in 53 life history interview participants. Participants were interviewed about their engagement with volunteering and the outdoors across time, and then about their relationship to the Preserve and the Valley before and since becoming a steward.

Place meanings were coded in MaxQDA+ according to the Layers of Place Meaning Framework (Williams, 2014) that catalogues meanings from surface level (inherent and instrumental) to deep (sociocultural and identity-expressive). A complete breakdown of this methodology and its results can be found in Chapter 2.

Mixed methods initiation. In this project I studied place meaning phenomenologically using photovoice, life history interviews, and participant observation methods. I also measured place attachment psychometrically using the Place Attachment Inventory survey instrument. As Chapter 3 will detail, these methods produced complementary findings, suggesting that place identities are formed in the early onboarding process for volunteers, affecting both identity-focused place attachments and identity-based place meanings. A goal of this research is to methodologically and theoretically advance the study of place. The findings from the first two phases of study called for a mixed methods approach that experimentally combines results that stem from seemingly incompatible research paradigms.

A mixed methods initiation approach "seeks to uncover paradox and contradiction.…[and] suggest areas for further analysis, or recast the entire research question" (Rossman & Wilson 1985, p. 633). This third phase focuses on the 48 individuals who took the all steward survey and participated in the life history interviews. I recoded the qualitative place meaning data based on the absence or presence of expressed identity-based place meanings, resulting in those with (N=26) and without (N=22) a Predicted High Place Identity (PHPI) score. These groups were tested for differences in their means and if this practice resulted in correctly pairing PHPI with actual high (≥ 4.0) place identity scores. A complete breakdown of this methodology and its results can be found in Chapter 4.

CHAPTER SUMMARIES

The following three chapters present papers that address distinct research questions and paradigmatic approaches. Each chapter is designed to stand alone as a peer-reviewed publication, but also build on the previous chapters' work.

Chapter 2 is a phenomenological exploration of McDowell Sonoran Conservancy volunteer stewards' place meanings in the Preserve and in their broader community. The study employs the qualitative methods of participant observation, photovoice (N=18) and life history interviews (N=53) to understand how volunteering with this conservation organization affects place meanings.

The results suggest that being initiated as and performing the identity of a steward transforms place meanings in the Preserve and in the City of Scottsdale. The rich narratives—elicited by photographs and life histories—also demonstrate how place meanings can traverse physical time and place through technology and life course events, such as childhood, parenthood, and grandparenthood. This scholarship was published in the March 2018 volume of the *Journal of Environmental Psychology* (Bleam, 2018).

Chapter 3 is a psychometric study of Conservancy volunteers' place attachments in the Preserve and Valley. The study employs the Place Attachment Inventory (Williams & Vaske, 2003) to measure established stewards (N=275) place attachments at both place scales. A second component of the study uses the same instrument in a pre-post design to understand place attachments prior to joining the organization and one year after joining the organization (N=29).

Results suggest that attachment to the Preserve significantly increases in the first year of service but is not correlated with increased volunteer intensity (average hours per

month). Volunteering with the Conservancy does not seem to have an effect on relationships with the Valley, but data suggests that it does positively impact attachment to the City of Scottsdale. This chapter relies on the results of Chapter 2 to provide complementarity, demonstrating the benefits of a critical pluralist approach (Patterson & Williams, 2005). This scholarship will be submitted for review in Spring 2020 to the *Journal of Environmental Psychology.*

Chapter 4 builds on the work of Chapters 2 and 3 by experimentally combining the results of these studies. This is done through a mixed methods initiation approach that aims to reveal contradictions and question assumptions about the data or methods (Rossman & Wilson 1985). The study hypothesizes that those with identity-based Preserve place meanings would score higher on the Place Identity measures within the Place Attachment Inventory.

The study transforms the qualitative place meaning data from the stewards who participated in both the life history interviews and all steward survey (N=48). Preserve place meanings were reanalyzed as either having a Predicted High Place Identity (N=26) or not (N=22). Results did not support the hypothesis, revealing a contradiction between these methods. The discussion addresses how these findings may serve to reconfigure the relationship between attachment, meaning, and identity. This scholarship will be submitted for review in Summer 2020 to the journal *Society & Natural Resources.*

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CHAPTER 2

UNBOUNDED PLACE MEANINGS AND EMBODIED PLACE IDENTITIES

ABSTRACT

Following Williams' (2014) call for a more thoughtful approach to the study of *place meaning*, this chapter employs a phenomenological research paradigm to elicit deeply personal meanings formed through conservation volunteerism. A photovoice protocol (N=18) and life history interviews (N=53) explore meaningful places for volunteer stewards in Scottsdale, Arizona's McDowell Sonoran Conservancy. Inductive thematic text analysis reveals how these volunteers form identity-expressive meanings that transcend and traverse geographic place scales. Results suggest that the concept of *place identity* is more than a subconstruct of *place attachment* and requires further theorizing as a phenomenologically embodied experience. Nonprofits and municipalities can learn from the organization's success in fostering an environmental steward identity as a means of community building.

INTRODUCTION

Studies of place-based civic engagement, such as conservation volunteerism, suggest that participation fosters place identities and strengthens place relationships at the particular volunteer site (Amsden, Stedman, & Kruger, 2013; Gooch, 2005). This chapter explores how, if at all, conservation volunteerism in a desert preserve landscape affects the human-environment relationship at the broader community, city, and regional scales. Faced with increasing *placelessness* (Relph, 1976), community planners and stakeholders would benefit from an understanding of whether and how place-based civic engagement contributes to a community sense of place.

This first phase of study uses Williams' (2014) Layers of Place Meaning framework to develop a phenomenological research approach that refocuses place meaning as the foundation of the human-environment relationship. A photovoice protocol (N=18) explores the lived experience of specific places, while life history interviews (N=53) address place as a process of relationships among geographic scales, such as city and region. Together, these approaches address how, if at all, volunteer engagement with a nature preserve affects place meanings both in the Preserve and throughout volunteers' broader communities. Results suggest that volunteer engagement creates an environmental steward identity that grounds participants in a rich and meaningful landscape and fosters deep place meanings that transcend and traverse geographic scales. Findings will also point to organizational practices that will help conservation nonprofits and municipalities foster volunteer identities that can be easily adopted by new and long-term residents.

Assessing the human-environment relationship. The many constructs used to assess the human-environment relationship have generated division among scholars (Lewica, 2011). Rather than continue to litigate this stalled discussion, the goal of this chapter will be to pursue a defined research approach that, among other things, results in increased clarity on the interrelationship among place research terms and perspectives. This study approaches sense of place as a holistic construct that includes the meanings and attachments generated in the person-environment relationship (Hummon, 1992). Using this definition, the concept is measured through its constituent parts—place attachment and place meaning. It is important to distinguish these constructs and the

elements they commonly represent, before focusing exclusively on the study of place meaning.

The place attachment construct is approached from a variety of paradigms, conceptual frameworks, and methodologies (Hernández, Hidalgo, & Ruiz, 2013). The most common approach defines place attachment as an affect toward a location (Low & Altman, 1992), and measures that affect through psychometric survey. Much like sense of place, this conceptualization of place attachment is a multidimensional construct with its own underlying subconstructs: *place dependence* and *place identity* (Williams & Vaske, 2003). Place dependence is a cognitive belief about a place's functional ability to meet desired needs through engagement in preferred activities (Stokols & Shumaker, 1981). As an element of place attachment, place identity is popularly conceived as a set of cognitions about the physical world that help contribute to a broader self-identity (Proshansky, Fabian, & Kaminoff, 1983). These cognitions are most commonly measured through objective research approaches such as psychometric surveys that assess participants' positions on a series of statements about a place.

Studies of place meaning capture "the symbolic content of experience" in place (Tafarodi, 2008, p. 29). Cultural geographers posit that meaning, materiality, and geographic location are the basic elements of the concept of *place* (Cresswell, 2004). Place meanings also serve as the foundation for an individual's place attachment (Stedman, 2002). An individuals' lived experience in place establishes meaning, and attachments to that place and those place meanings follow. Thus, it would seem intuitive that a place's symbolic *meaning* is just as important, if not more so, than the cognitive and affective level of *attachment* to that place. However, place attachment has received

far more attention from scholars than the underlying place meaning. In Chapter 4 of this dissertation, data from this phase will be used to explore the nature of the relationship between place meaning and place attachment, because both place meaning and place attachment data will be available from the same population.

Theoretical advancements in place meaning have stalled due to a lack of conceptual and theoretical clarity. Scholars who primarily study attachment approach this issue in a number of ways. Some scholars focus exclusively on the study of place as a locus of attachment. This approach has led to the refinement of place attachment instruments but fails to address the connection to place as a locus of meaning. Others attempt to quantify place meanings using approaches similar to the psychometric measurement of place attachment. Problematically, this is done without consideration of the philosophical compatibility of these concepts (Patterson & Williams, 2005). A third group employs qualitative methods such as discourse analysis to broaden the scope of place attachment beyond the measurement of an affective bond (DiMasso, Dixon, & Durrheim, 2013). While this approach is the most appropriate for honoring the richness of shared cultural symbols, it nevertheless places primacy on place attachment. The goal of this chapter will be to conduct a phenomenological study of place relationships and processes that establishes place meaning as the foundation of the human-environment relationship.

Williams' Layers of Place Meaning. Williams (2014) posits that no one approach can capture all facets of place meaning, let alone the totality of the human-environment relationship. He presents a framework that includes four levels of place meaning that progress from surface-level to deep meanings. Surface-level meanings

include *inherent* and *instrumental* meanings. Deep meanings include *sociocultural* and *identity-expressive* meanings.

Inherent meanings are derived objectively from the experience of the physical environment, such as the climate, and do not require cultural interpretation. Instrumental meanings are similar, but specifically and consciously meet a desired need, such as allowing engagement in a hobby. Surface-level meanings are not based on shared culture or individual identity, and generic survey instruments have been used to assess these types of meanings (Semken & Freeman, 2008).

Sociocultural meanings are shared symbolic meanings enacted through experience and language. These meanings are best explored through a discursive approach that assumes place relationships are performative and co-constructed through a "repertoire of interpretive frames, scripts or tropes of the phenomena to account for their actions" (Van Patten & Williams, 2008, p. 451). Identity-expressive meanings are also performative but differ in that they are highly individualistic and contribute to a sense of self. Capturing identity-expressive meaning requires an individualistic perspective committed to the inseparability of humans and their environment.

Phenomenological place meaning. Following the notion that place meanings are symbolic and experiential, this study prioritizes the exploration of deep meanings and complex processes rather than surface-level meanings. Further, since conservation volunteerism is recognized as a contributor to personal identity and rich experience (Amsden et al., 2013), the approach should also capture idiosyncratic meaning. A phenomenological paradigm is appropriate in this context.

A phenomenological study of place meaning does not seek to create generalizable typologies of why places are meaningful. Rather, the goal is to highlight the range of human experiences and unique place meanings that can contribute to a broad understanding of the human-environment relationship (Skår, 2010). Phenomenology seeks to transcend the dualities of object/subject, nature/culture, and space/place by approaching humans and nature as inseparable (Ingold, 2000). The body is neither object nor subject (Merleau-Ponty, 1962), and preconsciously mediates the meaning-making process (Seamon, 1979).

Epistemologically, phenomenology is governed by *radical empiricism* that requires the researcher to have direct contact with the experience being studied, a lack of *a priori* assumptions, and adaptability to the ways that experience is revealed (Seamon, 2000). Ethnographic methods such as participant observation, photovoice, and life histories are thus ideal for the phenomenological study of place because they are performed, not static activities (Basso, 1996). Further, as meaning is inherently about symbolic culture, an anthropological perspective is well positioned to contextualize the lived experience.

There is a need to refocus on place meaning as the foundation of the human-environment relationship, from which place attachments are then established. This study will follow Williams' (2014) Layers of Place Meaning framework to explore deep place meanings from a phenomenological research perspective. Results will manifest at three levels of understanding of the human-environment relationship: theoretical, empirical, and applied. At the broadest theoretical level, this research will develop the place meaning construct and its connection to place attachment and place identity. At the

intermediate empirical level, this study will demonstrate how place meanings transcend and traverse geographic scales through the experience of volunteerism. Finally, at the applied level, this research will help practitioners understand the mechanisms that foster deep place meanings and build stronger communities through place-based identities.

Study context. This study is a partnership with the nonprofit McDowell Sonoran Conservancy (the Conservancy) of Scottsdale, Arizona. The Conservancy contracts with the City of Scottsdale to help manage the McDowell Sonoran Preserve (the Preserve). At over 30,000 acres of biologically diverse high Sonoran Desert, the Preserve is the largest urban nature preserve in the United States (Harnik, McCabe, & Hiple, 2017). The Conservancy trains over 650 volunteer stewards to lead tours, provide user assistance at trailheads and on Preserve trails, perform trail construction and maintenance, and participate as citizen science research assistants on university and government-led studies of the Preserve ecosystem.

The McDowell Sonoran Conservancy stewardship program is anecdotally recognized within the Valley as a model for place-based engagement for residents, particularly those who are retired. This first phase of study will explore the factors behind this engagement. While strong place relationships have been found to be a precursor to volunteerism, few studies have explored the experience of volunteering itself as a factor in the development of place meanings and attachments (Musick & Wilson, 2007). Several studies suggest that conservation volunteerism strengthens place relationships with the particular volunteer site (Amsden et al., 2013; Gooch, 2005). However, this study addresses how conservation volunteerism affects place relationships across community place scales to form a broader sense of place.

METHODOLOGY

Conservancy volunteers' place meanings were explored qualitatively using a photovoice protocol (N=18) and life history interviews (N=53). This data was contextualized through participant observation as a steward over a three-year period.

Photovoice. In Fall 2015 and Spring 2016, 18 stewards participated in a photovoice protocol, also known as resident-employed photography (Wang & Burris, 1997). Photovoice is an effective method for exploring deeply personal place meanings and experiences because participants can capture images of their lived experience, discuss each place using the image as a stimulus, and reveal multiple levels of meaning (Van Auken, Svein, Frisvoll, & Stewart, 2010). As with other photovoice protocols, a purposive sampling strategy (N=18) was used in order to draw out rich meanings (Kusenbach, 2003). Demographic characteristics of the sample show a similar profile to the overall steward population (Table 5).

Participating stewards attended a 90-minute training session where they were instructed to collect and submit ten photographs of places that were meaningful to them. Of the ten photographs, five were in the Preserve, and five were out of the Preserve and within the Census-designated Phoenix metropolitan area. The session provided examples of other photovoice projects in differing contexts and subject matter in order to prepare participants without limiting or conditioning their types of place meanings. Participants were offered disposable cameras, but all elected to use their own digital SLR or smartphone cameras. *Walking interviews*— lasting between 60 and 120 minutes— visited one or more of the meaningful places and were designed to capture the phenomenological experience of place (Carpiano, 2009). During the interview, participants were presented

with each photograph and prompted to share why each place was meaningful and how, if at all, being a steward affected their relationship with that place. The ability to experience the physicality of a trail, viewscape, or backyard enhanced both the participants' response and the researcher's understanding of that place's meanings.

Table 5

Demographic Profile of Participant Groups

Demographic variable	Photovoice Participants	Interview Participants	All Steward Survey
N	18	53	314
Gender			
Male (%)	44	51	53
Female (%)	56	49	47
Mean Age (years)	62	64	64
Residency status			
Year-Round (%)	78	67	78
Seasonal (%)	22	33	22
Employment status			
Non-Retired (%)	17	33	27
Retired (%)	83	67	73
Highest Education Level			
High School (%)	6	11	9
Bachelors (%)	33	36	38
Advanced Degree (%)	61	53	53
Mean Residency in Arizona (years)	14	21	21
Mean Time in Conservancy (years)	4	3	4

The 18 voice-recorded interviews were transcribed and entered into MaxQDA text analysis software, along with the 180 photos. The research team created and assigned inductive codes using a grounded theory approach to describe why places were meaningful to participants (Glaser & Strauss, 1967). A team of three coders each applied

a 27-item codebook to a portion of the 180 photo interview segments. The research team also assigned one or two primary place meaning codes to each narrative. Intercoder reliability tests resulted in a Krippendorff's Alpha of 0.61, which is acceptable given the symbolic and fluid nature of place meaning categories. As the Results and Discussion sections will address, the photovoice protocol elicited very personal relationships, narratives, and symbols related to specific places. A selection of photos and accompanying quotes were displayed in a 3-month photo exhibit at a Scottsdale public library branch (Appendix D).

Life history interviews. In Spring 2017 the research team recruited 53 stewards using a stratified random sample to participate in life history interviews. The sample was stratified according to occupational and residency status, as well as hourly commitment to the Conservancy in the last year. This produced nine groups: seasonal resident retirees with low/no (0 hours/month), medium (1-7.9 hours/month), and high (8 or more hours/month) commitment; full-time resident retirees with low/no, medium, and high commitment; and full-time resident non-retirees with low/no, medium, and high commitment. Each group contained six participants except the seasonal resident retiree with low/no hours group (5). The sample is also broadly reflective of the overall surveyed population (Table 5).

Interviews were broken into two parts. In the first part, the researcher and the participant constructed a timeline of the participant's engagement with outdoor recreation activities and volunteer activities from birth to present day. In part two, participants answered a series of questions about their place meanings and relationships across geographic and temporal scales (see Table 6). The current chapter employs data from part

two only. The 53 interviews lasted between 45 and 120 minutes, and like the photovoice interviews, were voice-recorded, transcribed and entered into MaxQDA for text analysis.

Table 6

Life History Interview Questions

1. You first interacted with the preserve by [activity, e.g. hiking] in [year], and became a steward in [year]. What did the Preserve mean to you during this time period?
2. Since becoming a steward in [year], has the meaning of the Preserve changed? [If yes]: What does the Preserve mean to you now?
3. How would you describe your relationship with the Phoenix metro area, or the Valley? What does the Valley mean to you?
4. Has being a steward had any effects on your relationship to the Valley or life outside the Preserve? [If yes]: In what ways?

Place meanings in the Preserve were characterized according to Williams' (2014) Layers of Place Meaning framework. The research team constructed a codebook to identify how participants used inherent, instrumental, sociocultural and identity-expressive meanings to describe the Preserve, the Valley, and other places such as the City of Scottsdale. Changes within or between types of meaning were then considered as part of a phenomenological process of place meaning-making. Similarly, changes in place to the Preserve, city, and region were noted based on the respondent's answers to questions three and four. While less specific than the photovoice place meanings, the methodology allowed stewards to reveal place as a living, changing process experienced through the embodied practice of volunteering.

RESULTS

Preserve place meanings and processes. Inductive thematic text analysis of the 90 Preserve place photos and narratives reveal that the ability to enact a steward identity is the most salient primary place meaning (25% of photographed places; see Appendix D for full list). Other salient themes include experience-based memories (18%), a place's physical beauty (14%), symbolic meanings (12%), special flora (10%), and ability to provide a challenge (10%).

Participants shared how taking part in trail maintenance, citizen science, or other activities created a sense of ownership and lasting bond to that place. One steward, who signed up to collect data for a raptor monitoring study near the summit of a popular Preserve trail, attributes a different meaning to the area than most visitors:

> [You're] involved in something where you can make a contribution… I spent four hours there watching the people, watching the birds and taking in the scenery. Had I not been a steward I would probably not have that experience.

Meanings coded as experience-based include positive, negative, and origins-based memories. Participants shared stories about their first Preserve hike, the place where they witnessed a rattlesnake mating display, and places associated with death and personal injuries. One steward, who is employed as a pediatrician and lactation consultant, identified the place where she first nursed her children on the trails as particularly meaningful. She noted that the memory and photograph "imprint that this really special thing that I love doing I get to do in a place that is important to me." This experience is one example of how multiple roles—family, stewardship, work—interact to form an experience-based place meaning.

Participants in the life history interviews (n = 53) were asked about their place meanings in the Preserve and broader community and how, if at all, volunteering with the Conservancy affected those meanings. Using Williams' (2014) layers of place meaning framework, results show that stewardship both enriches previously established surface-level meanings and transforms some meanings from surface-level to deep meanings.

Twenty-five participants (49%) expressed their current Preserve place meaning in inherent (e.g. beautiful views) or instrumental (e.g. good place for hiking) terms. Among this group, nine described how being a steward led to no change in their relationship, while 16 noted that stewardship caused an enrichment of their instrumental place meanings. For instance, educational offerings about the Preserve's indigenous history, geography, flora, or fauna increased several participants' levels of appreciation for the Preserve as a hiking destination.

Twenty-seven participants (51%) described their current Preserve place meaning in sociocultural (e.g. appreciate preservation) or identity-expressive (e.g. feel ownership) terms. Within this subset, 21 participants described how their Preserve relationship transitioned from surface-level meaning (inherent and/or instrumental) to deep meaning (sociocultural and/or identity-instrumental) since becoming a steward. For example, a steward who participates in the trail building group remarked:

> I think once you start devoting some really hard work and time, you… take a little more ownership and pride in that place…You know how it is when you work hard with somebody. It's a bonding type of experience. And it bonds you not only to them, but to where you are.

Six participants described how they had already established deep place meanings with the Preserve prior to joining. Four of those six noted that stewardship deepened their identity-

based meaning. Meanwhile, two participants said that their relationship with the Preserve diminished since joining, due to overcrowding and interactions with disrespectful users.

Valley place meanings and processes. Of the 90 Valley (non-Preserve) places photographed, the most salient primary meaning is experience-based memories (18%). Other important themes included the place's ability to provide a bonding opportunity (17%), physical beauty (12%), symbolic meaning (11%), an opportunity to enact a family role or identity (9%), and special flora (8%).

The sites of Valley attractions were often meaningful as a catalyst for bonding. For one participant, four of his five Valley places were meaningful because they provide an opportunity to connect with his grandson. Photos depicted visits to baseball games, the Arizona Science Center, the Musical Instrument Museum, and the Southwest Wildlife Conservation Center.

Ten Valley places were coded as primarily representing a symbolic meaning. These symbols took many forms, including representing a participant's move to Arizona, appreciation for good health, gratitude for the Valley's natural amenities, the idea of the Old West, concern over water issues, and the success of home ownership. One participant noted that the photo of his backyard symbolized hard work and good fortune:

> This the nicest house that we've ever had and it's a third of an acre, with a nice backyard and pool.… It's a kind of payback for good planning. And a dream-come-true kind of thing.… I walk out there and I can't believe that this is ours.

Fourteen of 18 photovoice participants took at least one photo of their backyard, patio area, or home interior. This underscores the importance of these spaces in our lived experience, even for seasonal residents and recent retirement migrants.

Life history interview participants were first asked about their relationship to the Valley. Of the 52 participants who described their relationship with the Valley, 17 acknowledging no relationship with the Valley, 17 described having a primarily inherent or instrumental relationship with the Valley, and 18 expressed a deep sociocultural or identity-expressive relationship with the Valley. Only three participants (6%) shared that volunteerism had a positive impact on their Valley identity. However, given the semi-structured nature of the interview, probing and follow-ups were able to identify the geographic scales at which place relationships were changing, if at all.

Thirteen participants (25%) discussed how stewardship fostered a deep sociocultural or identity-expressive meaning at the Scottsdale level. A participant who is a resident of North Phoenix but works in Scottsdale had this to say about how stewardship connects her to Scottsdale:

> I think it's also given me a sense of accomplishment in the City of Scottsdale, trying to help it be a better city and help promote the natural beauty that's within its boundaries. I think I'm part of something big.…Being a part of the Preserve is being a part of [something] that will live forever.

The participant went on to refer to the Preserve as the "crown jewel" of Scottsdale. This oft repeated moniker speaks to the place meaning of the Preserve and its relationship to the City of Scottsdale on a broad, sociocultural level.

DISCUSSION

The ability to bond, perform an identity, enjoy beauty, and recall important memories accounted for 118 of the 263 (45%) primary place meanings assigned to all 180 photovoice photos. These meanings are consistent with findings from other place meaning studies, particularly those in nature-based contexts (Kyle, Mowen, & Tarrant,

2004; Russ, Peters, Krasny, & Stedman, 2015; Spartz & Shaw, 2011). While it is important to catalogue salient place meanings so that they may be situated within the context of similar populations, the goal of the phenomenological approach to place is to explore unique and deeply personal meanings.

Data from the photovoice protocol, life history interviews, and participant observation provides insight into both deep meanings at specific places, and place meaning processes at general place scales. Together, this creates a rich phenomenological view of how volunteer stewardship fosters place meanings. The following sections discuss how place meanings can be analyzed through particular contextual lenses that contribute to a broader understanding of the human-environment relationship and how Williams' (2014) Layers of Place Meaning framework reveals identity-expressive place processes at the Preserve level, and sociocultural place processes at the city level.

Dislocated symbolic place meaning. While it is understood that place meanings as a whole are symbolic, most are nevertheless tied to a particular location. For instance, the place where the participant nursed her children is symbolic of their relationship and the memorable occasion that occurred in that geographic space. However, some place meaning symbols are not related to a physical location or any events that have happened there, but rather the values embodied in that type of place.

Eleven stewards shared a photo of a desert plant in bloom. One participant's photo of an ocotillo in bloom during the dry season reminded her of "the beautiful and dramatic resilience of desert life." The many-armed saguaro cactus is a common sociocultural symbol for the Sonoran Desert and Valley. The saguaro served other, more individual symbolic purposes for stewards. For one steward the saguaro symbolized

participation in a Citizen Science research project, and for another it was a spiritual reminder of nature's grandiosity. In these examples, the particular plant and its location are not significant, and represent a dislocated symbolic meaning.

As more place experiences become mediated by technology, studies of human-environment relationships must capture these complex and dislocated place meanings and relationships. For one photovoice participant, three of ten photos depicted one of the Preserve's most visible landmarks, Thompson Peak. One photo was looking up at the peak, another was looking over the Valley from atop the peak, and a third was a screenshot of his cell phone home screen that featured a close-cropped view of the peak and surrounding mountains. Discussion of the first two photos focused on the importance of Thompson Peak as a hiking challenge and viewscape that serves as the "epicenter" of his world in Scottsdale. The screenshot of his cell phone symbolized his ability to stay connected with friends and family, and he described his cell phone as a type of appendage to his self. While the screenshot included the image of Thompson Peak, the meaning of the photo defies affiliation with any singular location. The location of this meaningful place exists somewhere between the body, Thompson Peak, and the invisible wavelengths connecting two people via cellular technology (Clark, 2004).

The phenomenological approach to place meaning captures complex human-environment relationships that go beyond physical location. While place is considered by geographers to be composed of materiality, geographic location, and meaning (Cresswell, 2004), these examples demonstrate the ability of meaning to transcend geographic location. In the case of the blooming ocotillo, the symbol of resilience is dislocated from one location, but present in many. For the photo of the cell phone screen, meaningful

relationships are mediated by a placeless technology, yet grounded in several physical and embodied places.

Temporal place meanings. The phenomenological approach also reveals place meanings through a temporal lens. While Skår (2010) showed that time of day can affect meaning, these results underscore several ways in which time can transcend spatiality and form the basis of deep place meaning. Most studies of place meaning and time focus on the life course or life place trajectories (Bailey, Devine-Wright, & Batel, 2016; Manzo, 2005). This temporal aspect of meaning was reflected across both the photovoice and life history interviews. The participant who photographed a Spring Training baseball game he attended with his grandson noted that baseball stadiums have only been important during three phases of his life: when he was child growing up in New York City, when he was raising his young boys while living in Boston, and now as he connects with his grandson in the Phoenix metropolitan area. The importance of baseball stadiums ebbs and flows for this participant, and he described this phenomenon as "periodically reconnecting."

The life course is not the only timescale that affects place meaning, particularly in the context of the desert. A special time in the steward experience is the spring wildflower season, which transforms desert landscapes from forgettable and drab to magnificent places filled with vibrant purple and yellow flowers. Mornings in the Preserve are also important for stewards. Not only can they escape the heat and crowds but see wildlife activity elusive to the casual hiker. One steward had this to say about his early morning mountain bike rides in the Preserve (Figure 2):

Figure 2

Sunrise Ride in the Preserve

> Maybe it's not so much the place, but it's the time of day…I just feel more alert and more in tune with what's around me at that hour of the morning…It's extremely peaceful, and you see a lot of wildlife because of the hour and because there's nobody else around.

Temporality can be used as a lens for understanding place meaning, and includes multiple dimensions such as the life course, time of year, and time of day. The final example in particular punctuates how time—along with symbols— are alternative, dislocated manifestations of place meaning. While places and the people who experience them

change over time, this research demonstrates how time itself can become the primary locus of meaning.

Embodied, identity-expressive Preserve place meaning. Stewards often discussed what it means to be a "blue shirt"— referencing the brightly colored t-shirts worn by volunteers. This identity is internalized through a number of processes. First, at the broadest level, the word *steward* carries a powerful weight for conservation-minded individuals. It implies a duty and identity beyond what *volunteer* suggests. Second, the New Steward Orientation is an important occasion for crafting the steward identity. During the event, stewards learn about the history of the grassroots movement that created the Preserve, and the heroics of their fellow Scottsdale community members, such as the now 95-year-old Jane Rau. Rau was an early champion of the Preserve movement and represents the spirit of blue-shirted "cactus huggers". Her service is celebrated through the Preserve's Jane Rau Trail, and she regularly receives celebrity treatment at Conservancy events. Through this initiation process, stewards learn to connect their modest contribution to a larger social movement.

The third and most powerful method for assuming a steward identity is through the embodied experience of participation. This often takes the form of stewards putting on their blue shirt and patrolling any of the 195 miles of Preserve trail by hiking, mountain biking, or horseback riding. While this task only requires greeting visitors and reporting issues, it can transform their Preserve place meaning. One new steward noted "a certain feeling of ownership, of caretaking, that I have now, [more so] than when I was just out there walking around before I was a steward." Patrolling requires the lowest

barrier to entry and least structure for stewards, but it is crucial in building a collective place-based identity.

These results depict a place identity that is embodied, experiential, and engrained in deep place meaning. This place identity does not resemble Proshansky and colleague's (1983) place identity construct, which assumes that identity is a cognition. There remains value in quantitatively measuring the degree to which participants identify with a place. However, a more complete understanding of the human-environment relationship requires that scholars develop a theoretical foundation for an embodied place identity that functions alongside identity-expressive place meanings.

City-level sociocultural meanings. Studies of place meaning have focused heavily on the home, particularly for aging populations (Manzo, 2003). A more recent focus on natural areas has provided theoretical advancement in place research (Lewicka, 2011). And while conservation volunteerism has been shown to result in improved sense of place in the land being served by the volunteers, it remains to be seen how, if at all, this type of civic engagement affects place relationships at the community, city, and regional scales. The phenomenological perspective reveals place meaning as a process that interacts across several geographic locations through the embodied experience of volunteerism.

Several stewards noted a sense of alienation toward the broad political climate associated with Arizona, the city-like feel of the Phoenix metropolitan area, or the snobbish Scottsdale shopping and resort culture. Despite this, participation in the McDowell Sonoran Conservancy steward program is capable of deepening place relationships at the city level because the organization has cultivated a desirable, easy-to-

adopt steward identity. For many, the "blue shirts" they meet inside the Preserve become a group of like-minded neighbors they interact with outside the Preserve through Conservancy and non-Conservancy social events. As Breakwell's (1996) identity process theory suggests, when the widely recognized place scales do not fulfill one's identity, individuals may turn to other, more local geographic units. Place-based volunteer activities occur inside the Preserve and lead to deeper Preserve meanings. However, it is the embodiment of a place-based social identity that affects community and city-level place meanings.

When assessing the effects of stewardship on relationships to places outside the Preserve, the issue of geographic scale proved challenging. Participants were much more likely to discuss a deepened place meaning to the City of Scottsdale than the Valley. This is not surprising, both because Scottsdale is a well-defined and recognizable landscape scale, and because stewards interact closely with the City of Scottsdale in the management of the Preserve.

Beyond its reputation as a beautiful place with outdoor amenities, Scottsdale is also widely known as a shopping and resort destination. This characterization of Scottsdale used to be the defining feature for one participant, who is a seasonal Scottsdale resident from the Midwest. As he recalled,

> I always looked at Scottsdale as kind of an egotistical hub of snobs and never really cared one way or another. It's just where I was and had no allegiance or any community to speak of at all. It was just a destination. And learning about the Preserve and learning about how that process went through…gives me a whole different opinion of the whole Scottsdale area… [Being a steward] has given me a feeling that the community really does care about something other than glitz, glamor, [and] money.

This case is an example of how a widely shared—and in this case, negative—sociocultural meaning can be replaced by a positive sociocultural meaning through volunteerism and direct engagement with the landscape. Studies of the human-environment relationship often have difficulty in determining the appropriate geographic scale to assess attachment or meaning. These flexible semi-structured interviews, in the context of participants' life histories, were able to explore place meanings across a variety of geographic scales and time frames.

CONCLUSION

Theoretical contributions. This study contributes to a theoretical and practical understanding of the human-environment relationship from a phenomenological perspective. Photovoice and life history methodologies reveal how deep place meanings may be experienced through dislocated symbolic and temporal frames. Driven by an embodied place identity, results also depict place meaning as a process acting across several geographic scales. These deep, identity-expressive and sociocultural meanings emerged through the use of phenomenologically focused methodologies such as photovoice and life history interviews. Results at this theoretical level help to develop the place meaning concept and highlight the impact of using Williams' (2014) Layers of Place Meaning framework to deliberately study one facet of the human-environment relationship.

The example of stewardship demonstrates how identity is an embodied experience enacted through an inseparable person-environment interaction. This place identity is critical for stewards in developing place meanings not only in the Preserve, but also across the community. While the widely used cognitive place identity construct has

value, these results suggest a need for further conceptualizing around a phenomenological place identity that is seen as part of deep place meaning.

Limitations and recommendations. Critics of the phenomenological approach to place remark that it is too particularistic, idiosyncratic, and voluntaristic (Shamai, 1991; Stedman, 2002). Scholars have also noted that phenomenology cannot adequately address broad historical and group-level forces that shape the individual experiences (Pred, 1984; Massey, 1993). These critiques are valid— particularly if one assumes that phenomenology can reflect all aspects of the human-environment relationship. However, Williams' (2014) Layers of Place Meaning framework encourages a piecemeal approach to the study of the human-environment relationship. By recognizing the limits of what a phenomenological paradigm can study, it allows the researcher to adopt a pluralistic approach with the potential to produce "distinct but compatible insights... [or] synergistically complementary findings" (Patterson & Williams, 2005, pp. 374-375).

For instance, future studies could supplement these findings with a discursive approach that adds group-level and historical dynamics. Chapters 3 and 4 of this dissertation will compare phenomenologically embodied identity findings with cognitive psychometric place identity scores. This will result in a sharpened model of place identity and address the broader ontological issue of the relationship between the cognitive and the experiential aspects of human perception.

Applied contributions. In a time of increasing homogenization of distinctive places, these findings can be applied to help connect populations with their communities. Environmental and other volunteer-based organizations can learn from the success of the McDowell Sonoran Conservancy in creating an easily adopted identity through program

structure and message. Municipalities could follow the City of Scottsdale's model to protect a natural area while building community support and connectivity around a positive image. Together, these results can improve the academic understanding of identity-expressive place meanings as well as provide practitioners a case study for how to craft volunteer identities and a broad sense of place.

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CHAPTER 3

PLACE ATTACHMENT AND VOLUNTEER INTENSITY

ABSTRACT

This study measures a group of new conservation volunteers' (N=29) place attachments to the land they are preserving and their broader community immediately before volunteer orientation and one year later. Paired sample *t*-tests demonstrate that volunteers' place attachment to the conservation entity significantly increases in the first year of service from 3.48 to 3.69 (p = .015, two-tailed), while place attachment to the broader community does not significantly increase—going from 3.37 to 3.42 (p = .598, two-tailed). Additional testing indicates that place attachment increases at the city level. Using survey results from all volunteers and their reported hours (N=207), this study found no correlation between place attachment and volunteer intensity (r = .104, p = .134). These results—which are complemented by an earlier qualitative study of volunteer place meaning—suggest that place identity increases as a result of acquiring the environmental *steward* identity and not necessarily intense participation.

INTRODUCTION

Those who have a strong relationship with a place are more likely to begin volunteering in service of that place (Larson, Usher, & Chapmon, 2018; Vaske & Kobrin, 2001; Walker & Chapman, 2003). This is particularly true for place-based civic engagement activities such as conservation volunteerism (Andersson et al., 2007; Krasny et al., 2014). While this empirical link is both unsurprising and well-established, the relationship between place attachment and volunteerism once an individual begins their place-based civic engagement is unclear (Musick & Wilson, 2007). Does place

attachment plateau with the decision to begin conservation volunteerism, or does engagement raise attachment levels?

In an age of increased placelessness (Relph, 1976), communities want to know how to foster stronger place relationships, and conservation organizations are looking to craft volunteer experiences that lead to increased participation and impact. These needs are especially prescient as the baby boomer retirement wave continues (Einolf, 2009). Due to fraying social and physical ties in the later stages of life, older populations are at risk for placelessness (Rowles, 1983). Yet at the same time, aging populations are a vital resource for volunteer organizations, suggesting further exploration of this population (Joseph & Skinner, 2012). This chapter explores the dynamics of place attachment in a population of primarily retired volunteer stewards serving Scottsdale, Arizona's McDowell Sonoran Preserve. The goal is to contribute to a broader understanding of how, if at all, volunteering contributes to sense of place—defined as the meanings and attachments generated in the person-environment relationship (Hummon, 1992).

This phase of the study measures the place attachments of two subpopulations of stewards. First, to understand how place attachment develops early in the volunteer experience, the study measures new volunteers' attachments to the Preserve and broader community—defined as the Phoenix metropolitan area, or Valley—across their first year of service. Then, to understand the relationship between place attachment and volunteer engagement, the inquiry explores the possible correlation between all stewards' self-reported volunteer hours and their attachment to the Preserve. Results indicate that even though these volunteers arrive to the organization with a high Preserve place attachment, place attachment to the Preserve significantly increases in the first year. However, place

attachment to the Valley does not increase in the first year. When exploring the relationship between self-reported volunteer hours and Preserve place attachment, no correlation was found between these variables across new or established stewards.

These results suggest that although conservation volunteers may arrive at an organization with a high level of attachment to the conservation entity (in this case a land preserve), the process of joining and being part of the volunteer organization further increases place attachment. While place attachment to the broader community was not found to increase in the first year of service, alternative testing suggests that place attachment increases at an intermediate geographic scale between the Preserve and Valley, specifically the City of Scottsdale. The analysis of volunteer intensity suggests that even minimal engagement produces an increase in place attachment—an encouraging sign for communities looking to connect their residents to their place.

An individual's level of place attachment is based in part on what that place means to him/her, also known as place meaning (Stedman, 2002). The results of this chapter are consistent with findings from an earlier phase of the study that qualitatively assessed stewards' Preserve and Valley place meanings (Bleam, 2018; Chapter 2). Interviews found that volunteering increased identity-based place meanings, but not necessarily as a consequence of higher engagement in the organization. Together, these results suggest that identifying as a volunteer steward is itself a primary catalyst for a stronger sense of place, and not high hourly engagement as a volunteer.

Theoretically, the findings highlight the complementarity of quantitative place attachment results and qualitative place meaning results. However, more work is required, particularly on the issues of identity and place scale. For practitioners, the

McDowell Sonoran Conservancy model demonstrates how a low barrier of entry and high direct engagement in the environment foster place attachment to the conservation land and potentially to the City of Scottsdale.

Theoretical foundations. The study of place relationships is characterized by diverse and conflicting approaches, making it critical to begin by defining terms (Patterson & Williams, 2005). This chapter is part of a larger study that conceptualizes sense of place as a holistic construct that includes the meanings and attachments generated in the person-environment relationship (Hummon, 1992). Rather than attempt to represent the entirety of the human-environment relationship through the study of one construct, this approach follows the critical pluralist framework (Patterson & Williams, 2005) whereby the subconstructs of sense of place—*place attachment* and *place meaning*—are studied from their most appropriate perspectives.

While many scholars approach place attachment as a superordinate construct that approximates the human-environment relationship (Lewicka, 2011), this chapter focuses on the quantitative measurement of place attachment, defined as an affect toward a location (Low & Altman, 1992). This narrow definition is well-suited to the psychometric assessment of place attachment (Williams, 2014) through instruments such as the Place Assessment Inventory (PAI; Williams & Vaske, 2003). The PAI is a widely used instrument that has demonstrated a reliable and valid construct of place attachment, measured through two subconstructs: *place identity* and *place dependence*. Place identity captures the aspects of one's self-identity that are drawn from the physical world (Proshanky, Fabian, & Kaminoff, 1983), while place dependence represents the ability of

a location to meet an individual's needs through activities or engagement (Stokols and Shumaker, 1981).

An individual's place attachment fundamentally depends on that location's place meanings, defined as "the symbolic content of experience" (Tafarodi, 2008, p. 29). This second phase of study builds on the first phase of study (Chapter 2). Using Williams' (2014) Layers of Place Meaning framework, Chapter 2 found that embodying the role of volunteer steward strengthened identity-based place meanings and transformed some relationships from surface-level to deep place meanings both in and out of the Preserve (Bleam, 2018).

A broader goal of this dissertation is to empirically test this theorized relationship between place meaning and place attachment. Guided by a critical pluralist scientific world view, this dissertation explores attachment and meaning from their most appropriate perspectives in one population. The results— gathered from incompatible research paradigms—may then offer "distinct but compatible insights… [or] synergistically complementary findings" (Patterson & Williams, 2005, pp. 374-375). This mixed methods complementary approach allows for diverse intellectual thoughts and approaches to place while strictly respecting the foundational beliefs that each approach has about the human-environment interaction. While the focus of this phase of study is psychometric place attachment, the phenomenological place meaning results from the previous phase of study are used to contextualize these data and contribute to a broader understanding of holistic sense of place.

Place attachment, volunteerism, and aging. Efforts to unpack the relationship between place attachment and volunteerism are primarily framed here as an investigation

into whether and how place attachment is a precursor to initial volunteer participation. In this context, conservation volunteerism is often studied as one of several pro-environmental behaviors (PEBs) or environmentally responsible behaviors (ERBs), along with activities such as alternative transportation use or attending public meetings on environmental issues (Buta, Holland, & Kaplanidou, 2010; Larson et al., 2018; Vorkinn & Riese, 2001). Place identity in particular has been identified as an antecedent to ERBs (Scannell & Gifford, 2010; Vaske & Kobrin, 2001), though some studies stress that the relationship between place attachment/identity and place engagement activities is indirectly mediated by high social capital such as the presence of neighborhood cohesion and trust (Lewicka, 2005; Payton, Fulton, & Anderson, 2005).

Concern for one's environment has been identified as a primary motivator for joining conservation-based volunteer groups (Bruyere & Rappe, 2007), though it is less important to volunteer retention (Asah & Blahna, 2012). At the broader level, a strong regional identity has been shown to predict support for conservation efforts (Carrus, Bonaiuto, & Bonnes, 2005) and community attachment is a predictor of grassroots participation (Perkins, Brown, & Taylor, 1996).

While little is known about how community-level place attachments change once volunteers begin service, the first phase of this study provides evidence that volunteering fosters changes to place meanings at some geographic scales. The research team asked 53 McDowell Sonoran Conservancy stewards about their place meanings in the community. The results indicated that few participants (6%) expressed that volunteering enriched their place meanings associated with the Valley, while considerably more participants (25%) discussed how volunteering transformed their relationship to the City of Scottsdale

from shallow to deep place meanings (Bleam, 2018). Although place meaning and place attachment are separate constructs, the relationship between meaning and attachment suggests there may be similar transformations.

The work of McNamara and Gonzales (2011) suggests that the primary factors driving volunteering intensity and retention are similar to the factors driving the commitment to begin volunteering in the first place: high social, cultural, and human capital. While factors such as strong social networks, good health, and flexible schedules are more important than place attachment in determining engagement levels, it is necessary to understand whether volunteer engagement and place attachment are correlated. If higher average hours/month of volunteering is not positively correlated with higher place attachment at the volunteer site, then it suggests that place attachment does plateau at or around the time the volunteer joins the organization. If a positive correlation is found between hourly commitment and place attachment, it would suggest more engagement is better, and would warrant further exploration into this relationship, potential confounding variables, and the nature of volunteer engagement.

Studies on place attachment across the life course have largely focused on older populations. While older populations are often depicted as entering a sedentary state of decline, many recent retirees are better characterized as experiencing a *Third Age.* The Third Age describes a period of life for those who have left the workforce but have not experienced significant health limitations (Laslett, 1991). Because the existence of a Third Age is a relatively recent phenomenon, there are no cultural norms to define how and where Third Agers spend their time (Biggs & Daatland, 2004). Those with the cultural and economic capital to do so often become retirement migrants or seasonal

residents (Frey, 2010). The lack of rootedness may lead to increased placelessness for these residents (Longino, 1990; Relph, 1976). However, other studies have suggested that while retirement migration may change the nature of the place relationship, it does not preclude the establishment of strong place attachments and meanings over shorter time periods (Cuba & Hummon, 1993; Gustafson, 2001). Place relationships for retired individuals who *age in place* may increase with age (Fried, 1982) or fray with decreasing social bonds (Oh, 2003).

The volunteer sector relies heavily on retirees, with volunteer organizations often providing one of the strongest connections between older residents and places (Joseph & Skinner, 2012). Third Agers typically want to have some structure in their schedule but not be weighed down by obligations that feel too much like work. Volunteer activities fulfill this desire (Oliver, 2012). Not only is the baby boomer retiree cohort larger than previous retiree waves (Frey, 2010), but data from the early segment of this cohort shows higher rates of volunteerism compared to the previous Silent Generation (Einolf, 2009). Noting these changing trends, Bushway and colleagues (2011) call for a research agenda that explores how environmental volunteerism affects older adults' place relationships and other outcomes such as physical and mental health. It is thus important to determine the nature of the relationship between place attachment and active volunteerism to benefit volunteer organizations and the communities they serve.

Study context. This chapter draws from results of a study on the sense of place experience of volunteers with the nonprofit McDowell Sonoran Conservancy (the Conservancy) in Scottsdale, Arizona, USA. The Conservancy has a roster of over 600 volunteer "stewards" who help the City of Scottsdale manage the largest urban nature

preserve in the United States (Harnik, McCabe, & Hiple, 2017), the McDowell Sonoran Preserve (the Preserve).

Stewards carry out a variety of tasks, including assisting visitors on trails and at trailheads, leadings tours, performing construction and maintenance on trails, and assisting university and government-led studies of the Preserve ecosystem as citizen scientists. Of the 222 participants who agreed to share their volunteer hour data, the majority (60%) volunteer less than 10 hours per month, while a small percentage (7.3%) volunteer more than 50 hours per month (overall M=6.24 hours/month).

The Conservancy volunteer population is older (M=64 years old), mostly retired (73%), and highly educated (53% have an advanced degree). Sixteen percent of participants consider themselves to be native Arizonans, and 22% are *snowbird* residents who split their time between residences in and out of Arizona. Participants self-reported high levels of health and socioeconomic status, making this a typical Third Age population.

While four in five stewards live in the City of Scottsdale, this study measures place attachment to the community at the broader level of the Phoenix metropolitan area, which includes Phoenix, Mesa, Scottsdale, Tempe, and several adjacent cities that constitute the Valley of the Sun—or Valley in local terms. Over the last 50 years, the region's sprawling housing development across the Sonoran Desert landscape and influx of out-of-state young professionals and retirees have resulted in low residential connection to neighborhood and city (Roper Center for Public Opinion Research, 2000). Thus, a program that connects residents—and retirees in particular—to the desert has the potential to foster stronger place attachments to the region.

HYPOTHESES

This study tests three hypotheses, which are based on the gaps in the literature identified above, previous findings in phase I (Chapter 2), and the dynamics of the McDowell Sonoran Conservancy volunteer steward population.

Hypothesis 1 (H_1). New volunteers' Preserve place attachment scores will grow significantly in the first year of service in the organization.

Hypothesis 2 (H_2). New volunteers' community place attachment scores will grow significantly in the first year of service in the organization.

Hypothesis 3 (H_3). Volunteer engagement— defined by average hourly commitment and continued participation— will be positively correlated with Preserve place attachment scores across all volunteers.

METHODOLOGY

Place attachment surveys. An electronic survey was distributed to 527 established stewards through a weekly volunteer email. The call for participants ran across four weeks in Fall 2016 and returned 275 valid responses (response rate: 53%). The call for participants included an overview of the project that encouraged responses through a raffle of four $25 gift cards, as well as participant rights.

Participants were asked to rate their attachment to the McDowell Sonoran Preserve and the broader community (the Phoenix metropolitan area, or Valley) using an adapted version of Williams and Vaske's (2003) Place Attachment Inventory (PAI; Appendix E). The Valley was selected as the relevant geographic place scale for three reasons. First, not all participants live in the City of Scottsdale. Second, the Valley is the general place scale that includes several sprawling cities that, to many, including myself,

have indistinguishable boundaries. This makes identifying the nexus of place at the city level more difficult. Third, to volunteers in the McDowell Sonoran Conservancy, the phrase "City of Scottsdale" (CoS) has a particular meaning separate from the geographic city limits. The Preserve is owned by the CoS, and in most contexts, volunteers refer to the CoS as the city staff members who collaborate with the Conservancy on Preserve issues. While Scottsdale was not used as a geographic scale in the PAI, participant observation conducted in the year between the pretest and posttest suggested it was an important place scale. Therefore, a question measuring attachment to the City of Scottsdale was added to the posttest survey to offer comparative insight.

Of the many psychometric place attachment instruments, the PAI was selected because it is widely used, tested for internal validity, and designed specifically for natural recreation contexts. The PAI includes six statements addressing place identity (e.g. "I feel that this place is a part of me.") and six statements addressing place dependence (e.g. "This place is the best place for what I like to do."). Respondents were asked to indicate their response to each statement on a 5-point Likert scale (*Strongly Disagree* to *Strongly Agree*).

The study also measured place attachment for those who had signed up to volunteer but had not yet participated in New Steward Orientation. The incoming steward classes of October 2016, November 2016, and January 2017 (total n = 62) were emailed one week prior to their orientation and asked to take the PAI in order to measure their attachment to the Preserve and Valley. This resulted in 39 valid responses (response rate: 63%), and this group represents a baseline pretest of place attachment to the Preserve and Valley. One year after each respondent took the pretest, the research team emailed

participants with a follow-up posttest that included the same PAI as well as some other follow-up questions, and a $10 REI gift card for participation. This resulted in 29 valid responses (pre/posttest response rate: 74%; overall pre/posttest response rate: 47%). Of the participants who consented to allow the research team to view hourly reporting data during their first year (N=35), nine had ceased reporting hours in the last six months, demonstrating a 1-year retention rate of 75%.

After retesting place attachment using the Place Attachment Inventory (PAI), the posttest survey also measured change in place attachment using a posttest-only format that asked, "Since becoming a steward, my attachment to [The Preserve, Scottsdale, The Valley] has: [decreased, increased, or stayed about the same.]" By itself, this posttest-only design is less valid than the pretest-posttest design (Shadish, Cook, & Campbell, 2002). However, its inclusion is designed to provide context to the primary pretest-posttest results and suggest further lines of inquiry.

Volunteer engagement is considered through the constructs of intensity and retention, each measured through hours per month (McNamara & Gonzales, 2011). Volunteer hours from the previous year were gathered from the organization's records with permission from participants. For both constructs, individual outliers who volunteered greater than 40 hours/month (N=13) were removed as well as hours from a participant's first month in the organization, which is inflated for the New Steward Orientation and other trainings. Intensity was measured by average hours per month in the previous two years, while retention was determined by the presence or absence of hours in the most recent 6-month in-season window.

Survey data was analyzed using SPSS 24. While there is disagreement in the literature about whether to treat Likert scale data with parametric or nonparametric statistical tests, this study follows deWinter and Dodou's (2010) conclusion that since both types of tests have similar power in practice, parametric tests can be used. Out of caution, nonparametric alternatives were also run, and used in the results when the parametric and nonparametric tests reached different conclusions. Preliminary analysis showed that no place attachment measures violated the assumption of normality. Group differences were calculated using independent sample and paired sample *t*-tests. Correlations were measured using a Pearson bivariate metric. After reviewing the demographic profile of the respondents with the volunteer coordinator, we found the representativeness of the sample to be satisfactory.

RESULTS

Paired samples *t*-tests evaluated the effect of the first year in the organization on Preserve place attachment and Valley place attachment (See Table 7). Results indicate a statistically significant increase in Preserve Place Attachment scores from surveys taken prior to joining the organization to surveys taken one year after joining ($p = .015$, two-tailed). The mean increase in Preserve place attachment scores was .21 with a 95% CI ranging from -.04 to -.38, and an eta squared statistic (.19) indicating a large effect size. Further exploration of the data indicates that of the two place attachment subconstructs, only Preserve place identity scores significantly increased from pretest to posttest ($p = .005$, two-tailed). These results support H_1 and suggest that attachment to the Preserve increases at some point between signing up to volunteer and completing the first year of service.

Table 7

Pretest and Posttest Place Attachment Scores for New Stewards (N=29)

Place Scale	Construct	Mean (Pretest)	SD	Mean (Posttest)	SD
McDowell Sonoran Preserve	Place Attachment	**3.48***	.63	**3.69***	.56
	Place Identity	**3.83***	.69	**4.11***	.60
	Place Dependence	3.13	.63	3.27	.61
Phoenix Metro Area/ The Valley	Place Attachment	3.37	.63	3.42	.57
	Place Identity	3.70	.66	3.75	.64
	Place Dependence	3.05	.70	3.10	.71

* The mean difference is significant at the .05 level.

Paired samples *t*-test results indicate Valley place attachment scores do not increase in a statistically significant way in the time between joining the Conservancy and one year after joining ($p = .598$, two-tailed). The mean increase in place attachment scores was .05 with a 95% CI ranging from -.24 to .14, and an eta squared statistic (.01) indicating little to no effect. These results do not support H_2 and suggest that volunteering with the Conservancy does not affect Valley place attachment in the first year of service.

In the alternative place attachment posttest-only assessment, 19 of 29 (65%) first-year stewards noted that their attachment to the Preserve increased in the first year of stewardship when asked directly, while 6 of 29 (21%) said their Valley attachment increased. Although the city level was not a part of the Place Attachment Inventory (PAI) instrument, 15 of 29 (52%) participants noted that their attachment to Scottsdale had

increased in the first year of stewardship. While there is no corresponding PAI data to support this, it suggests that attachment to Scottsdale may rise in the first year of service.

The third hypothesis proposes that volunteer intensity and retention is correlated with Preserve place attachment. Pearson product-moment correlation analysis demonstrates no significant relationship between established stewards' Preserve place attachment scores and the number of volunteer hours per month ($r = .104$, $N = 207$, $p = .134$). Among established stewards who consented to provide their hourly volunteer numbers (N=207), no statistically significant difference in Preserve place attachment was found between those who had not reported any hours in the previous six months ($N=38$, $M = 3.68$, $SD = .58$) and those who were actively reporting hours in that timeframe ($N = 169$, $M = 3.78$, $SD = .60$), $t(205) = 0.904$, $p = .816$ (two-tailed). These results provide no support for H_3 and suggest no correlation between volunteer engagement and Preserve place attachment scores.

DISCUSSION

Volunteerism and attachment to the volunteer space. Although conservation volunteers tend to come to an organization with a high level of attachment to the conservation resource (Larson et al., 2018; Vaske & Kobrin, 2001; Walker & Chapman, 2003), this study demonstrates that place attachment continues to rise in the first year of service. The cause of this rise in Preserve place attachment—from 3.48 to 3.69—may be difficult to deduce from the data alone. However, the qualitative place meaning data from phase I of this study provides necessary context.

Phase I of this study (Chapter 2) used Williams' Layers of Place Meaning (2014) framework to assess stewards' place meanings on a scale from shallow (e.g. inherent or

instrumental) to deep place meanings (e.g. sociocultural or identity-expressive)[2]. Participants often noted that their relationship to the Preserve deepened upon going through the New Steward Orientation process and becoming a steward. Many expressed that their love for the Preserve had little to do with the number of hours committed to the Conservancy, which begins to explain why the survey analysis found no correlation between Preserve place attachment and volunteer intensity or retention.

The most popular activity for volunteers was *patrolling*, accounting for 32% of steward volunteer hours in FY 2015. A patrolling steward wears his or her blue Conservancy shirt, greets visitors, and reports trail issues while hiking, mountain biking, or horseback riding. During the place meaning interviews, one relatively new steward noted, "a certain feeling of ownership, of caretaking, that I have now, [more so] than when I was just out there walking around before I was a steward." This sentiment demonstrates a transformation from a shallow, instrumental place meaning to a deep, identity-expressive place meaning. This result supports the notion that one's place attachment can increase without any corresponding rise in engagement. The factor influencing higher place attachment, then, is the designation of being a steward. This designation is earned by completing New Steward Orientation and wearing the blue steward shirt. Once an individual is a steward, higher engagement is likely a factor of available time, health, and social connections in the organization.

The rise in Preserve place attachment from 3.48 to 3.69 was not driven by a significant rise in Preserve place dependence, which rose only from 3.13 to 3.27. The

[2] Shallow place meanings include inherent (e.g. good weather), and instrumental (e.g. good hiking) categories. Deep place meanings include sociocultural (e.g. community-based) and identity-expressive (e.g. contributes to self-identity).

first-year rise in attachment is attributable to the rise in Preserve place identity from 3.83 to 4.11. The qualitative place meaning data provides context to this quantitative place attachment data and suggests that place identity increased in the process of becoming a steward and embodying the steward identity. Volunteer engagement—in the form of hours served—is one way of enacting this identity. However, those who did not submit hours in the previous 6 months did not have a significantly lower Preserve place attachment than those who were actively contributing volunteer hours. This suggests that once the steward identity is attained, a high level of volunteer engagement is not required in order to feel or embody the steward identity.

Volunteerism and attachment to the broader community. In the first year of service, Valley place attachment scores did not rise in a statistically significant way. Valley place attachment scores began relatively low (M=3.37). The median rose slightly after one year (M=3.41) yet remained lower than even the median Preserve place attachment pretest level (3.48). These findings highlight the potential limits of the effect that volunteering has on place attachment to the broader community. In the intervening year between the pretest and posttest, participant observation and qualitative interviews provided context to these results.

Although the Preserve is geographically contained within the Valley, the qualitative place meaning results suggest that stewards identify the Preserve as separate from the Valley. From a place meaning perspective, the Valley is the built environment, the place "down there" with traffic, smog, and concrete. The Preserve is a respite from the city, a natural desert landscape set aside to counter the encroaching development. Geographically, the Preserve is part of Scottsdale, and Scottsdale is part of the Valley.

Nevertheless, one steward told me, “I don't spend a whole lot of time in the Valley. I spend most of my time in Scottsdale”. Thus, the geographical spatial reality is superseded by the sociocultural place meaning developed by living in Scottsdale and identifying with the Preserve.

Despite the possible confusion with regards to the City of Scottsdale, the qualitative findings for place meaning suggests that volunteering has an effect on participants’ relationships with Scottsdale. The posttest-only question confirmed that more than half (52%) of respondents felt that their place attachment to Scottsdale had grown in the first year of volunteer service, while only 21% felt that their place attachment to the Valley had increased. The qualitative findings support these results and suggest that the Conservancy’s close affiliation with the City of Scottsdale facilitated the improved place attachment. Further, my concerns about the City of Scottsdale being indistinguishable from neighboring cities proved unfounded, even for residents of nearby municipalities. One City of Phoenix resident told me that volunteering gave her “a sense of accomplishment” in promoting the beauty within the City of Scottsdale.

The utility of the Place Attachment Inventory. The Place Attachment Inventory (PAI) is a validated instrument that is widely used and designed for measuring the narrowly defined construct of attachment in recreational contexts (Williams & Vaske, 2003). The results of this study suggest several points of discussion on the utility of the PAI. These issues include the challenge of place scale, the applicability of the PAI to cosmopolitan populations, and value of the PAI as a pretest-posttest instrument.

First, as the previous section discussed, these findings underscore the difficulty of designing a place attachment instrument that measures attachment at specific geographic

scales. While the Preserve as a place scale was an obvious choice, determining a place scale to represent the broader community was not. This is particularly true for this population, who live in multiple municipalities in a large metropolitan area. One solution would be to provide flexibility for participants to define their own place scales—such as their city—before reporting their attachment levels. To ensure some level of comparability, this could be done in conjunction with reporting place attachments to predetermined place scales.

Second, the PAI may not be appropriate for cosmopolitan populations such as the participants in this study. The PAI measures place dependence through level of agreement with statements such as "This place is the best place for what I like to do" and "Doing what I do at this place is more important to me than doing it in any other place". The comparative nature of these statements means that people with broader or more varied residential and travel place experiences are less likely to *Agree* or *Strongly Agree* with these statements. Put another way, this population is potentially measuring the quality of hiking in the Preserve against the Grand Canyon and the quality of the amenities in the Phoenix metropolitan area against the Grand Cayman Islands. The inability to account for this variability means that the place dependence outcomes are less valuable, particularly when comparing these scores across populations.

Finally, this chapter establishes that the Place Attachment Inventory has value as a pretest-posttest instrument and could be used in future studies to measure changes in place attachment across time. Specifically, these results demonstrate that place attachment to the Preserve rose at some point in the first year of service, and the qualitative data suggests that the New Steward Orientation was an important event that

may have facilitated this transformation. It is recommended, however, that qualitative research be done prior to establishing the place scale so that the most appropriate scale is selected.

The holistic sense of place construct. The goal of the broader study is to contribute to an understanding of this population's holistic sense of place by exploring the underlying aspects of sense of place—attachment and meaning—from their most appropriate perspectives (Patterson & Williams, 2005). While there is risk in combining disparate research paradigms, this complementary approach will help to inform the study of place, and not necessarily represent the entirety of the human-environment relationship.

Initial comparisons suggest that the results for quantitative place attachment and qualitative place meaning support similar conclusions. Both sets of data suggest that volunteering improves place relationships at the Preserve level and does not significantly change place relationships at the Valley level. Both sets of data suggest no correlation between level of volunteer engagement and relationship to the Preserve. And both sets of data suggest that the city level would have been a more appropriate scale to assess the relationship between volunteering and community place relationships.

The qualitative place meaning data provided context to the quantitative place attachment results, suggesting that volunteering with the Conservancy improves one's sense of place in Scottsdale. The results of the possttest only place attachment questions also demonstrated this, though in a small sample. While the quantitative place attachment results could only conclude that Preserve place attachment rises at some point between agreeing to join and one year after joining, the qualitative place meaning results added

more context to this assessment. The key to this complementarity is the overlapping concept of place identity. Identity-expressive meanings are the deepest type of place meaning in Williams' (2014) framework. Place identity is one of two subconstructs in place attachment, and the only subconstruct that showed a significant rise in the first year of volunteer service. Together, they suggest that a steward identity is established in the process of joining the organization and completing New Steward Orientation. This manifests through the development of identity-expressive place meanings and higher levels of place identity, a subconstruct of place attachment.

CONCLUSION

Theoretical contributions. This study addresses the gap in knowledge of the relationship between place attachment and volunteering after volunteering has begun. While volunteers typically arrive to an organization with high levels of place attachment, place attachment to the conservation land continues to rise in the first year of participation. This rise in place attachment is not correlated with level of commitment to the organization. Further, results show no significant difference in place attachment to the Preserve between active and inactive volunteers. On the other hand, the results of the Place Attachment Inventory survey suggest no significant difference in place attachment to the Valley across the first year of volunteering. However, alternative testing suggests a potential connection between volunteering and increased place attachment at the city level.

These quantitative place attachment results are supplemented by the Chapter 2 results that qualitatively assessed place meaning in the same population and at the same place scales. Together, this study of meaning and attachment is designed to provide a

more robust understanding of the holistic concept of sense of place. This preliminary comparison suggests that while these approaches and underlying philosophical traditions are at odds, the diverse data streams in this study complement and supplement one another in meaningful ways.

Limitations. This study is limited by having participants take the Place Attachment Inventory (PAI) at only two points in time: before New Steward Orientation and one year later. If the goal is to understand the dynamics of rising place attachment, participants would ideally take the PAI soon after New Steward Orientation as well. This might help explain how Preserve attachment rises in the first year, but not as a result of increased volunteer engagement. However, this limitation in the quantitative data is mitigated by the availability of the qualitative place meaning data to provide context. As the interviews, participant observation, and photovoice outcomes indicate, the volunteers' place relationship to the Preserve changes mostly around New Steward Orientation, as they embody the steward identity. Future research would require this intermediate place attachment data point to improve our understanding of the temporality of the rise in place attachment, and thus the understanding of the basis of the attachment.

This study is also limited by the choice to include the Valley as the community place scale rather than the City of Scottsdale. It was only after the pretest surveys were administered that qualitative interview data suggested that the city level would have been more appropriate. This discovery led to a posttest-only measurement of place attachment to the City of Scottsdale, which corroborated the qualitative findings that attachment to Scottsdale rises in the first year of volunteering with the Conservancy. In cases where the appropriate community place scale is not clear, it is recommended that future studies

conduct qualitative analysis prior to administering an instrument such as the Place Attachment Inventory.

Applied outcomes and next steps. In a time of increasing placeless and changing population demographics, it is necessary to understand how to foster place attachment for people in their community, especially aging populations. This study illustrates that low levels of engagement in a conservation organization can foster stronger place attachment to the conservation entity and the city that owns and manages that entity. These findings support efforts of cities such as Scottsdale, Arizona to invest in conservation and invite the community to buy in as stewards of their environment.

This chapter has employed a complementary mixed methods approach whereby the overall qualitative place meaning results helped to corroborate and enrich the understanding of the quantitative place identity results. Further exploration is needed to directly pair an individual's place meaning results with their place attachment outcomes. Do people with identity-based place meanings score higher on place identity measures within the Place Attachment Inventory? Can a person with a strongly held shallow place meaning (e.g. the Preserve is a good place to hike) have a higher attachment than someone with a weakly-held deep place meaning (e.g. the Preserve is a part of who I am)? This comparison (Chapter 4) is possible because 48 established stewards who were interviewed about their place meaning also took the PAI survey. This exploration will help to empirically clarify the relationship between these constructs and further develop the holistic sense of place construct.

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CHAPTER 4

LINKING PHENOMENOLOGICAL PLACE MEANING AND PSYCHOMETRIC PLACE ATTACHMENT APPROACHES THROUGH EXPERIMENTAL MIXED METHODS

ABSTRACT

This chapter experimentally combines phenomenological place meaning data and psychometric place attachment data from the same population of McDowell Sonoran Conservancy volunteers (Scottsdale, AZ, USA). The goal is to understand how place meaning and place attachment are connected under sense of place and challenge how they are studied separately as constructs. I recoded 48 place meaning narratives to determine those with (N=26) and without (N=22) a Predicted High Place Identity (PHPI). The study hypothesizes that those who expressed identity-based place meanings —as indicated in the qualitative narratives—will self-report higher place identity scores—as indicated in the quantitative surveys. An independent- samples *t*-test indicated no difference in place identity scores between those with and without a PHPI ($p = .071$, two-tailed). Results suggest issues with construct validity in the place attachment construct and place identity subconstruct. This study concludes that place attachment should be reimagined as a construct that measures affect toward a location's meanings rather than affect toward a location. While this conceptual shift is subtle, it alleviates the incompatibility between meaning and attachment paradigms. The conclusion of this chapter will demonstrate how these constructs can be studied together under a holistic research paradigm.

INTRODUCTION

The challenge of studying *sense of place*— defined as the attachments and meanings experienced in the person-environment interaction (Hummon, 2003)— is that attachment and meaning are often explored from incompatible research paradigms (Patterson & Williams, 2005). Studies of place meaning tend to be qualitative, with many using interviews and ethnographic methods to phenomenologically explore the lived experience of place. Studies of place attachment tend to be quantitative, with many using surveys to psychometrically measure and compare attitudes toward places. While scholars have acknowledged that place meanings are the basis on which attachments are formed (Stedman, 2002), meaning and attachment are rarely explored within the same project and the empirical understanding of this relationship is limited.

This research study examines the sense of place of a group of conservation volunteers serving Scottsdale, Arizona's McDowell Sonoran Preserve. The first phase explored place meaning from a qualitative, phenomenological research paradigm (Bleam, 2018; Chapter 2). The second phase measured place attachment from a quantitative, psychometric research paradigm (Chapter 3). The results gathered from these distinct approaches are generally complementary. However, the goal of this third phase is to clarify how place meaning and place attachment are related by experimentally combing these data sets. Using mixed methods *initiation*, this chapter challenges the orthodoxy of a critical pluralist scientific worldview in place research (Beckley, Stedman, Wallace, & Ambard, 2007; Patterson & Williams, 2007) and suggest new directions for methodological approaches to the study of place (Greene, Caracelli, & Graham, 1989).

Place background and theory. The place literature is characterized by a diversity of thought and perspectives, separated by intellectual silos, that has made it difficult to build on previous work. The variety of scholars entering the field of place research in the 1990s-2000s resulted in appeals for convergence around terms, methods, and paradigms (Lewicka, 2011). Scholars from quantitatively focused fields, such as environmental psychology, primarily argued for psychometric approaches that measure place relationships through standardized survey instruments. Scholars from qualitatively focused fields, such as anthropology and geography, primarily argued for phenomenological approaches that seek to narratively understand the on-the-ground lived experience of place.

Noting the lack of coherence, some scholars attempted eclectic integration of approaches, prompting methodological critique (Patterson & Williams, 2005). Integration often fails because these common approaches differ not just in their use of qualitative or quantitative methods, but in their fundamental philosophical commitments for how the world is experienced, and how or if researchers can measure that corporeal experience. A research approach cannot, for example, simultaneously satisfy phenomenology's philosophical commitment to the inseparability of the human-environment relationship as well as the psychometric approach's commitment to place as an attitude object. In this light, calls for simple integration or convergence are misguided.

Patterson and Williams (2005) instead advocate for a *critical pluralist* approach to the study of place. From this perspective multiple approaches, firmly grounded in their respective traditions, can coexist and even produce "synergistically complementary findings [or] entirely distinct but compatible insights" (pp. 374-375)." The call for

critical pluralism encouraged scholars to move beyond the argument for one unifying approach and focus on pursuing the approach that best suited their study of the human-environment relationship. While this allowed for a more productive focus on the scholar's chosen construct, it had the unintended consequence of inhibiting advancement in the field by encouraging intellectual silos and discouraging experimentation that included mixing approaches with different philosophical traditions.

This discouragement manifested most notably in a series of articles published in *Society & Natural Resources* in 2007 (see: Beckley et al., 2007; Patterson & Williams, 2007; Stedman & Beckley, 2007). In their article "Snapshots of What Matters Most", Beckley and colleagues (2007) present an analysis of resident-employed photography data where they code place meaning photo-narratives into single categories: biophysical or sociocultural. Williams and Patterson responded with an article, "Snapshots of What, Exactly?" (2007), calling out their missteps in mixing philosophical paradigms, reinforcing the nature/culture dichotomy, and sacrificing the richness of the qualitative data. A cohort of the initial authors responded in an article, "If We Knew What it Was We Were Doing, it Would Not be Called Research, Would it?" (Stedman & Beckley, 2007), defending their choice to experiment in the interest of advancing knowledge. This saga is instructive in demonstrating how a) integration can be ineffective if not done with thoughtful consideration of compatibility, and b) the current growth potential of place literature is limited. This study is born out of this intellectual tension and driven by the need to explore the confluence of place meaning and place attachment—carefully but experimentally.

Mixed methods approaches. Previous phases of this project studied conservation volunteers' place meanings from a phenomenological perspective and place attachments from a psychometric perspective. While the results were derived from what Patterson and Williams (2005) would characterize as incompatible research paradigms, the findings demonstrated complementarity (Chapter 3). Both studies found that participating as a volunteer with the McDowell Sonoran Conservancy strengthens place relationships to the McDowell Sonoran Preserve and to the City of Scottsdale, and that the volunteer orientation process establishes a *steward* identity that is unrelated to that volunteer's time commitment to the organization. By employing a mixed methods complementary approach, the study was able to contribute insights to these related constructs without compromising the philosophical commitment of either the psychometric approach or phenomenological approach.

Mixed methods projects can be designed to serve a variety of purposes. In addition to complementary studies, mixed methods approaches included triangulation, development, expansion, and initiation (Greene et al., 1989; Table 8). While this project's previous use of the complementary approach enhanced our understanding of the conservation volunteers' holistic place relationships, it did not address the broader issue of how these constructs are related. The goal of this chapter is to advance the study of place by exploring the relationship between place meaning and place attachment through mixed methods initiation.

This experimental design requires going against the best practices of critical pluralism and combining approaches that have contradictory philosophical commitments. However, the goal is not to exemplify the ideal methodological approach. Rather, mixed

methods initiation “seeks to uncover paradox and contradiction.…[and] suggest areas for further analysis, or recast the entire research question” (Rossman & Wilson 1985, p. 633). The following section will now explore the rationale that forms the basis for the need to mix paradigms.

Table 8

Mixed Methods Approaches

Approach	Description	Purpose
Complementary	Study related phenomenon from different methods	Use strengths of each method to enhance understanding of findings
Triangulation	Study the same phenomenon with different methods	Corroborate results to strengthen findings
Development	Use the results of method 1 to inform the execution of a method 2	Increase the validity of results from the second method
Expansion	Study multiple phenomena from multiple methods	Increase the scope of study and use most appropriate methods
Initiation	Experimentally combine methods	Reveal new perspectives and contradictions

Adapted from Greene et al., 1989

The interplay between meaning and attachment. Among all the constructs used in the study of the human-environment relationship, place attachment and place meaning remain most prominent because they speak to the enduring epistemological and ontological questions at the core of place. Is place a locus of attachment or a center of meaning? Is our relationship to place measured as an affective bond or explored as an emerging narrative? (Williams, 2013) In defining sense of place as a holistic term that

includes attachments and meanings, this study is interested in exploring place as both a locus of attachment *and* center of meaning. Place relationships are studied as an affective bond *and* emerging narrative.

This project has studied both attachment and meaning from their most appropriate perspective, with particular attention paid to place meaning (Bleam, 2018). The decision to focus on place meaning is first driven by the fact that it is underexplored compared to place attachment (Williams, 2014). More importantly, the holistic sense of place construct employed in this project supports that place attachments are dependent on the individual and group's underlying place meanings (Stedman, 2002).

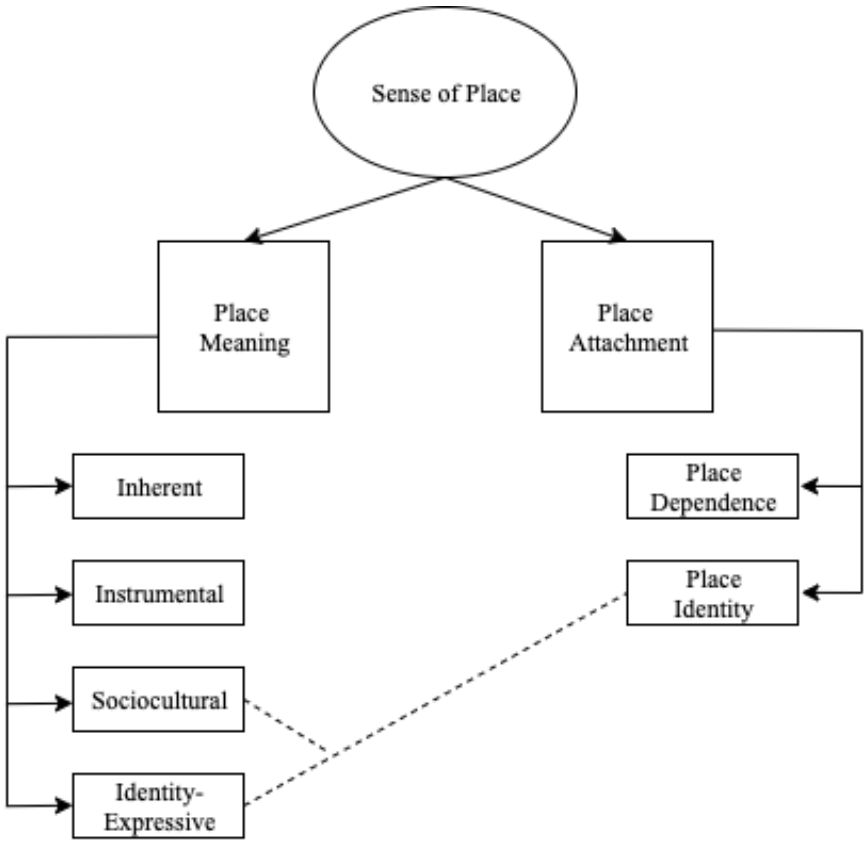
Place attachment surveys may provide an understanding of the intensity of an individual's affect toward a location, but that intensity is dependent on what that place means to them. Moreover, a place often contains multiple meanings, even for a single individual (Manzo, 2005). However, evaluating place attachment scores leads one to wonder: what is it that they are attached *to*? Due to the difficulty in properly studying both constructs using a single research paradigm, the direct relationship between attachment and meaning has not been empirically measured.

A research approach that only allows for place attachment and place meaning data to show general complementarity is not enough. Meaning and attachment have a direct relationship to one another, and we will not fully understand that relationship without directly comparing meaning and attachment data. While a single, unifying method that satisfies all philosophical commitments does not exist, another strategy is promising. A mixed methods initiation approach could study attachment and meaning from their most appropriate perspectives and experimentally combine the data in an area where the

constructs have overlap. Based on the results of the complementary comparison of place meaning and place attachment (Chapter 3), the concept of identity is an essential area of convergence (Figure 3).

Figure 3

Sense of Place Conceptual Diagram



Place identity in attachment and meaning. Identity is central to both place attachment and place meaning. The widely used Place Attachment Inventory (PAI) instrument measures place attachment through the subconstructs of *place identity* and

place dependence (Williams & Vaske, 2003). The PAI uses the structuralist definition of place identity, defining it as the parts of one's self-identity drawn from the physical world (Proshansky et al., 1983). Place scholars have challenged this definition of identity as vague and underdeveloped, as well as questioned its assumed subordination to attachment (Hernández et al., 2007). Despite these uncertainties, place identity remains prominent in place attachment literature and would benefit from further theoretical development. Regardless, an individual's feeling of connectedness to a place (place identity) is a central element of their affect toward that place (place attachment) along with the practical benefits that place affords (dependence).

Phenomenological scholars generally disapprove of operationalizing a concept like identity because it runs counter to the holistic nature of place (Seamon, 1987). This purist position would not embrace any intellectual overlap with psychometric approaches. However, while not a strictly phenomenological research approach, qualitative analysis done using the Layers of Place Meaning framework (Williams, 2014) allows scholars to preserve the richness of meanings and to categorize meanings in a way that highlights phenomenological place identity.

The Layers of Place Meaning framework is an analytical tool that codes qualitative place meanings into one of four categories: inherent, instrumental, sociocultural, and identity-expressive (See Chapter 2 for examples of categories and meanings). While the lines between each meaning category are not firm, identity-expressive meanings stand out as the deepest and most idiosyncratic form of place meaning. These are the "intangible emotional, symbolic and spiritual meaning(s)" that come from the individual and contribute to their identity (Williams, 2014, p. 77). These

deep and identity-forming meanings are why we study place meaning in the first place (Relph, 1976).

It is unclear whether identity is an aspect of place attachment, a type of place meaning, both, or neither. But it is clear that place identity is of central importance in the results of the first two phases of this study. Identity is also undoubtedly important to place relationships at large. An experimental mixed methods study that explores the overlap between place attachment and place meaning using the concept of identity is not intended to produce a stand-alone methodology. It will, however, bring clarity to the role of identity in sense of place as well as the constructs that rely on identity—place attachment and place meaning.

A way forward. Previous studies have explored both place attachment and place meaning using one of the mixed methods approaches identified by Green and colleagues (1989). Several, like the second phase of this study (Chapter 3), took a complementary approach to strengthen the analysis of results (Devine-Wright Howes, 2010; Kyle, Mowen, & Tarrant, 2004). Some have employed a developmental approach whereby the qualitative place meaning results inform the quantitative attachment instrument (Wynveen, Kyle & Sutton, 2012). Others have taken a mixed-methods expansion approach to study many aspects of the place relationship, but not in a way that explores the connection between the terms (Brehm, Eisenhauer, & Stedman, 2013; Semken & Freeman, 2008). Each of these mixed methods attempts tried to improve the understanding of the study populations' sense of place. They rest on the assumption that attachment and meaning are conceptually related constructs; however, none of these studies examine the empirical connection between attachment and meaning.

Since place meanings are the basis on which place attachments are formed, meaning and attachment are not just complementary constructs. In order to advance the place literature their direct relationship must be explored. Mixed methods initiation requires an experimental mixing of methods aimed at bringing a fresh perspective to the topic (Rossman & Wilson, 1985; Green et al., 1989). The first two phases of this study—in which conservation volunteers' place meanings were explored phenomenologically and their place attachments measured psychometrically—stand alone as methodologically-sound studies. This third phase of study will experimentally combine the data from each of the first two phases using the shared construct of identity. This will not only help bring clarity to the relationship between attachment and meaning, but to the role of identity in these constructs.

Study context. This research was conducted in partnership with the McDowell Sonoran Conservancy, a nonprofit organization that contracts with the City of Scottsdale, Arizona to manage the McDowell Sonoran Preserve. The organization includes a small staff and over 600 volunteer stewards. Stewards carry out a variety of public-facing duties such as leading hikes, greeting visitors at trailheads, and 'patrolling' the trails by foot, bike, or horseback. Stewards also assist the organization with behind-the-scenes tasks such as trail maintenance, volunteer management and training, and assistance on university or government-led citizen-science research projects.

The steward population is highly educated, older, and primarily White (Table 3, Introduction). Most volunteers are retirees, and a significant subset (22%) are seasonal residents in the Valley. They self-reported high health and socioeconomic levels—

consistent with expectations of a volunteer population in North Scottsdale, Arizona, a desirable destination for retirees.

The conservation volunteers of the McDowell Sonoran Conservancy are an ideal population to study place identity and how it connects place meaning and place attachment. Studies have demonstrated that engagement in conservation volunteerism contributes to the development of identity-based place meanings (Amsden, Stedman, & Kruger, 2013; Gooch, 2005). The first two phases of this study concluded that joining and engaging with the organization led to more identity-expressive place meanings and higher self-reported levels of place identity.

METHODOLOGY

This study transforms a selection of the phase I qualitative data into quantitative data in order to test the following hypothesis: stewards with deep, identity-based Preserve place meanings (as indicated in interviews) will self-report higher Preserve place identity (as indicated in surveys).

Phenomenological place meaning methodology. Phase I of this study explored McDowell Sonoran Conservancy volunteer stewards' place meanings at several place scales, including the McDowell Sonoran Preserve. The research team assessed place meanings through a photovoice protocol (N=18; also known as resident-employed photography), life history interviews (N=53), and participant observation as a steward.

Life history interviews explored place as a process and embodied experience. Fifty-three participants were drawn from a stratified random sample according to occupational status, residency status, and hourly commitment in order to explore a range of experiences. Interviewees were asked about their relationship to the Preserve and

broader community across time. By exploring place as a phenomenological process, it allowed the place meanings to be contextualized as well as provide comparisons across key time frames, such as before and after joining the conservation organization. While the photovoice protocol and participant observation contributed to the phase I results, the phase III mixed methods approach uses only the life history interview data (For more information on the photovoice and participant observation, see Chapter 2).

The research team analyzed the life history interviews using Williams' (2014) Layers of Place Meaning framework. The team coded participants' place meanings as inherent, instrumental, sociocultural, and identity-expressive. Results indicated that more than half of participants (51%) currently possess sociocultural or identity-expressive Preserve place meanings. Within that group, 21 (42%) discussed how their relationship to the Preserve transformed from shallow (inherent or instrumental) to deep (sociocultural or identity-expressive) after joining the Conservancy (See Table 11 on p. 102 for examples of these narratives).

Psychometric place attachment methodology. Phase II of this study measured stewards' place attachments to the McDowell Sonoran Preserve and broader community. Assessing place attachment with a standardized survey allows for broad distribution and cross-population generalizability that is not found in phenomenological approaches. The psychometric perspective assumes place to be an attitude object, toward which an individual can have an affective relationship (Low & Altman, 1992). Thus, the research team assessed place attachment through a survey distributed to 527 established stewards through the weekly volunteer email in Fall 2016 (N=275; 52% response rate).

The survey featured the Place Attachment Inventory (PAI; Williams & Vaske, 2003), a widely used instrument that measures place attachment through the subconstructs of place identity and place dependence. Participants self-reported their place identity to the Preserve through their level of agreement with six Likert-scale prompts: *I feel that this place (The McDowell Sonoran Preserve) is a part of me, This place is very special to me, I identify strongly with this place, I am very attached to this place, Being at this place says a lot about who I am,* and *This place means a lot to me.*

Place identity scores were calculated using a scaled assessment that averages participants scores, producing a number between 1-5. A score of 5 indicates the participant answered *Strongly Agree* to each prompt, while a score of 3 indicates the participant answered *Neutral* to each prompt. While scores below 3 indicate a negative place identity, they are unlikely scores given the study's positive place context. Thus, I interpret a score of 3 to indicate that the individual has little or no attachment, a 4 to indicate a positive attachment and a 5 to indicate a strongly positively attachment.

The 275 established stewards reported a high mean Preserve place identity score (M=4.20) and overall Preserve place attachment score (M=3.75). The survey also measured place attachment to the City of Scottsdale and Phoenix metropolitan area (the Valley) and was also distributed to a group of incoming stewards prior to joining and one year after joining (N=29). Phase III will only focus on the Preserve place identity scores of the 48 established stewards whose data is present in both datasets.

Phase III methodology. Forty-eight established McDowell Sonoran Conservancy stewards participated in both the phase I interviews and the phase II survey. Life history interview analysis used the Layers of Place Meaning framework (Williams, 2014) to

conclude that 26 of 48 participants expressed a predominantly sociocultural or identity-expressive Preserve place meaning (Chapter 2). These individuals were coded as having a Predicted High Place Identity (PHPI). An independent-sample *t*-test compared the mean Place Identity scores between those with (N=26) and without (N=22) a PHPI. Further, a Chi-square test for independence was conducted to test if there was an association between having a PHPI and having a high (4.0 or above) Preserve place identity score.

It should be noted that this mixed methods approach is unlike the approach seen in the "Snapshots" discussion (Beckley et al., 2007), which combined some aspects of phenomenology with aspects of empiricism. This type of mixed methods initiation is more likely characterized as a psychometric/empirical reanalysis of phenomenological data. This distinction is important in light of Franck (1987), who asserted,

> the underlying assumptions of phenomenology and empiricism and their respective goals are so different (even oppositional), that what one would achieve from some integration would be a strategy still based primarily in one perspective or the other, depending on which assumptions and goals were attained. (p. 60)

This experimental methodology intentionally violates the philosophical foundation of phenomenology by reducing rich, narrative place meanings into codes that indicate the presence (N=26) or absence (N=22) of an identity-based Preserve place meaning. While this approach will not satisfy purist phenomenologists or even critical pluralists, the goal is to advance our understanding of place and its most commonly employed methodologies.

HYPOTHESIS

This chapter will use the experimental initiation methodology to test a simple hypothesis: McDowell Sonoran Conservancy stewards who expressed identity-based place meanings in interviews will have higher self-rated place identity survey scores.

RESULTS

An independent-samples *t*-test compared the Place Identity survey scores of those with a Predicted High Place Identity (PHPI; N= 26) and those without (N=22). Results indicate that those with a PHPI did not possess significantly higher place identity scores than those without a PHPI (See Table 9).

Table 9

PI Scores for Those With and Without a Predicted High Place Identity (PHPI)

Group	N	Mean	SD	Median	Low	High
PHPI	26	4.29	.51	4.00	3.00	5.00
No PHPI	22	4.00	.60	4.09	2.83	5.00

t (46) = 1.84, p = .071 (two-tailed)
Note: scores are based on a 1-5 scale, with 3 (Neutral) considered as someone with little or no positive place identity. A score of 5 indicates strong positive place identity.

A Chi-square test for independence (with Yates Continuity Correction) indicated no significant association between having a Predicted High Place Identity and having a high (4 or higher) place identity score (Table 10).

Table 10

High Place Identity vs PHPI Using a Chi Square Test for Independence

Predicted High Place Identity (PHPI)	Place Identity score ≥ 4.0 Yes	No
Yes	**22 (*a*)**	**4 (b)**
No	**14 (c)**	**8 (*d*)**

x_2 (1, N=48) =1.80, p=.18, *phi*=-.241

The independent samples *t*-test demonstrated that the place identity scores of those with a PHPI (N=26; 4.29) were higher than those without a PHPI (N=22; 4.00) and the p-value (0.71) nearly met the threshold of significance at the .05 level. Further, while the Chi-Square results also could not reject the null hypothesis, the identity narratives and place identity scores were congruent for 30 of 48 individuals (quadrants *a* and *d*). Although it could be argued that these results do weakly support the hypothesis, the face validity of this hypothesis suggests there should be an overwhelming difference in mean place identity scores between those who did and did not express identity-based place meanings. Therefore, I am concluding that these results do not support the hypothesis.

It is instructive to look at examples of individual narratives and place identity scores representing each of the four quadrants (*a*, *b*, *c*, and *d*) in the Chi Square test for independence. The following participant profiles and interview excerpts demonstrate how identity-based place meanings can and cannot predict place identity scores (Table 11).

Most individuals' place meaning narratives and place identity scores align to support the hypothesis. The participant in example (*a*) had a high place identity score (4.0) and used possessive language ("It's part of me and I'm part of it.") to describe her deep, identity-expressive Preserve place meaning. The participant in example (*d*) expressed that the Preserve was a beautiful place that he used for exercise—clear inherent and instrumental place meanings—and had a below-average place identity score (3.33).

Table 11

Examples Comparing Place Meaning Narratives and Place Identity Scores

a) 22 of 48 participants expressed an identity-based meaning (PHPI) and had a high place identity score. Female, Age 53 Preserve Place Identity Score: 4.0 / 5	[On Preserve place meaning since joining the Conservancy]: "I don't think I'm contributing in any way that reflects the amount that I appreciate it. But I definitely feel like I'm part of the Preserve. It's part of me and I'm part of it. Much more than I did when I just loved to hike it before."
b) 4 of 48 expressed an identity-based meaning (PHPI) but did not have a high place identity score. Female, Age 69 Preserve Place Identity Score: 3.0 / 5	[On Preserve place meaning prior to joining the Conservancy]: It was a place to hike. I didn't really know anything about the history of the Conservancy or anything like that. So, it was basically a place to hike. *Interviewer*: And how about your relationship with the Preserve since joining the organization? I feel... sort of a sense of protectiveness about it. Knowing more about the history, the evolution, how the community rallied to get the thing going. It becomes—I don't even know the word to describe it. It's a lot more meaningful. It's not just a place to hike anymore. It's kind of like, I feel proud about it.

c) 14 of 48 did not express an identity-based meaning (no PHPI) but had a high place identity score: Male, Age 77 Preserve Place Identity Score: 4.83 / 5	*Interviewer*: How would you characterize your relationship with the Preserve up until 2006? What did the Preserve mean to you at that point? Well it was just a beautiful place to be and what it meant to me was just a beautiful place and worth preserving. You know we contributed to that right at the very beginning and voted for the tax increases and things like that. *Interviewer*: And how about your relationships with the Preserve since you became a steward? Has it changed at all? No, it's the same. It's just one of those godsends. We are just so lucky to be out here, to have this. But no, I mean I was enthusiastic about it in the beginning and I still am. I wish I could do more hiking but I know my limitations. I do some but I think as far as my relationship goes it has always been very positive. *Interviewer*: Sure. So, becoming a steward didn't change anything about what you think about the Preserve? No.
d) 8 of 48 did not express an identity-based meaning (no PHPI) and did not have a high place identity score: Male, Age 65 Preserve Place Identity Score: 3.33 / 5	[On Preserve place meaning since moving to Arizona]: When we got out there in the winter of 2010 or 2011, we never went into the Preserve. But in 2011 or 2012 we started using it and we would visit it all the time. If we had people visiting and they like to hike we will take them up there. *Interviewer*: So, the Preserve is an exercise place for you? Yes. *Interviewer*: Any other sort of meanings to you? Yes, it is nice to be in a block from the mountain and peace and quiet. If you look up there is a nice, untainted mountain.

Other individuals' place meaning narratives and place identity scores were counter to the expectations of the hypothesis. The participant in example (*b*) used identity-based language when discussing her protectiveness and pride in the Preserve but submitted one of the lowest place identity scores of the group (3.0). The participant in example (*c*) spoke only about the Preserve in terms of its inherent beauty while also submitting one of the highest place identity scores (4.83). These examples raise questions about the connection between, and measurement of, meaning and attachment.

DISCUSSION

Phase III tested the hypothesis that volunteers who express identity-based meanings in the Preserve are more likely to self-report higher place identity in the Preserve. The results do not support this hypothesis and suggest a disconnect between the two constructs. This mixed methods initiation approach successfully challenges the assumptions underpinning the study of the human-environment relationship and suggests further areas of study, discussed below.

Fundamental issues. Those with a purist philosophy on mixed methods would explain the results as an outcome of the fundamental incompatibility of phenomenology and psychometric approaches. This issue was addressed earlier, but it is worthwhile to reiterate that this approach is not a proposed new and accurate method for the study of the human-environment relationship. Rather, it is a way to advance the current understanding of the study place. Since the results from the phenomenological and psychometric approaches were broadly complementary, it suggested an investigation of their congruence at the individual level. This investigation required an experimental

methodology. The results from the phase III experimental design did not support the congruence of place identity at the individual level and across approaches.

Phenomenological scholars may take issue with the reductive nature of the experimental reanalysis of qualitative narratives into binary categorical data. Although a certain amount of data reduction is inevitable when you reduce nuanced place meaning narratives into those with and without a Predicted High Place Identity, it is worth considering how this reduction might affect the accuracy of results. While participants were allowed to characterize their Preserve place meanings in any way they desired, it is possible that some participants possessed an identity-based meaning but were wrongfully categorized because they only expressed their inherent or instrumental meaning types during the interview. The validity of the place meaning results were confirmed by numerous meetings with McDowell Sonoran Conservancy stewards and employees, as well as through feedback from stewards during the research team's reporting of findings at several public and steward-only meetings.

The place meaning methodology would be improved through two changes to the protocol. First is ensuring that place meaning types are exhausted during interview questioning. Second is conducting member checks with a sample of participants at the end of the interview or soon thereafter to ensure that participants feel that the analysis of their interviews reflects their experience. While there remain limits in the extent to which a scientific methodology may represent truth, the phenomenological approach is best situated to reflect the lived experience of being (Gadamer, 1989).

Issues with construct validity. As intended, this mixed methods initiation study succeeded in raising questions about these commonly used constructs. Working from the

assumption that this experimental initiation approach has value and that attachment is based on meaning, these results suggest a false rejection of the hypothesis. This type II error brings into question the construct validity of place attachment and how it is measured using the Place Attachment Inventory instrument.

Construct validity—the notion that the measurements within a test indeed measure the intended construct—has long been a concern for place scholars and has led to outright rejection of entire approaches (Seamon, 1987), questions about how constructs and subconstructs are related (Hernández, Hidalgo, & Ruiz, 2013), recommendations for *member checks* of empirical results (Williams & Patterson, 2007), and an overall call to arms for scholars to interrogate their assumptions of how well their results represent what participants "actually mean, feel or experience" (Cantrill, 2016, p. 526). These results question the construct validity of both place attachment and place identity.

Place attachment construct validity. First, these results question whether place identity is a suitable subconstruct of place attachment. While the place attachment construct is defined as an affect toward a location (Low & Altman, 1992), the PAI survey instrument is designed to measure the intensity of that affect through the subconstructs of place identity and place dependence (Williams & Vaske, 2003). The participant in example (*c*) demonstrated how these constructs may be at odds. The participant did not express an identity-based Preserve place meaning but rated his place identity (4.83) very high, which resulted in a high overall place attachment (4.25). This participant stated that before becoming a steward he thought the Preserve was "a beautiful place worth preserving", and that this place meaning did not change after becoming a steward. Based on these place meanings alone, one would expect a low place identity score.

A closer examination of his interview suggests that he feels very strongly about this inherent meaning. The participant went on to say, “It’s just one of those godsends. We are just so lucky to be out here.” According to the Layers of Place Meaning framework, this steward’s place meaning would only be characterized as a shallow type of meaning. The intensity of the attachment *to* that meaning, though, appears deep. In this instance, the PAI succeeded in capturing the intensity of attachment. But strictly on the notion that these six statements are intended to measure place identity, this individual’s scores should be low, not high. The incongruence between subconstruct and construct suggests a lack of construct validity and calls into question whether place identity belongs under the place attachment construct.

Place identity construct validity. Regardless of whether place identity is measured as a subconstruct of place attachment, the results suggest that place identity also has construct validity issues. In order to achieve face validity—the most basic prerequisite of construct validity—we should expect those with identity-based meanings to have higher place identity than those without identity-based meanings.

The participant in example (*b*) demonstrates how this threshold of validity is not met. She expressed clear identity-based Preserve place meaning during her life history interview, stating that the Preserve is “not just a place to hike anymore. It's kind of like, I feel proud about it”. However, her Preserve place identity score (3.0) suggests that her place identity is neutral or non-existent. Given what she said about her place identity, why would she not “Agree” or “Strongly Agree” with the place identity assessment statement that “I feel that this place is a part of me”? In contrast to the participant in

example (*c*)—who was strongly attached to a shallow place meaning—it is possible that the participant in example (*b*) felt weakly attached to a deep place meaning.

The fundamental flaw common to the place attachment and place identity constructs, as measured in the PAI, is that these constructs are attempting to measure both intensity of affect as well as type of place relationship, such as identity-based or dependence-based. While both aspects should be studied as part of a holistic understanding of sense of place, this instrument (and the theoretical construction that shapes it) is not designed to meet this need. In order to navigate these construct validity issues, this discussion will pull apart meaning and attachment in order to reconceptualize their relationship and ultimately link their study.

Distinguishing meaning from attachment. Current place attachment measurement instruments ask participants to rate their attachments to particular regions, cities, parks, neighborhoods, and other place types. However, we know that each place has a different meaning to each participant—some shared and some personal. More importantly, each place scale likely has multiple meanings to each individual. When a participant is rating their level of agreement with the statement "This place [The McDowell Sonoran Preserve] says a lot about who I am", are they defining the place in their mind as a hiking destination (instrumental) or as a place to carry out their environmental stewardship (identity-expressive)? Further, are they responding in a way that speaks to their level of intensity of attachment toward that meaning, or to whether they feel identity or dependence toward that place?

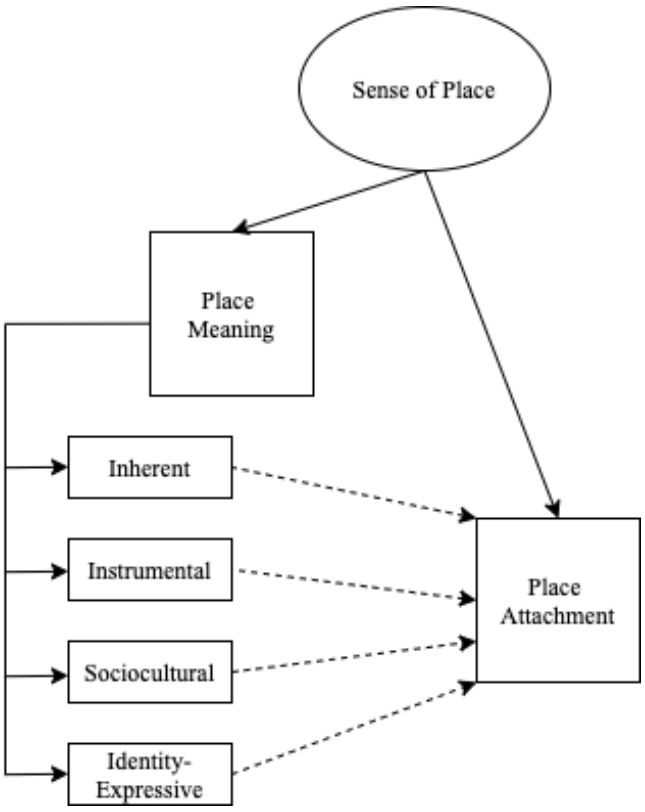
Instead of measuring attachment as a function of identity and dependence, this chapter suggests reconceptualizing the place attachment construct and instrument to

strictly focus on measuring intensity of attachment. This simplified conceptualization would leave the characterization of the type of meaning—be they deep, identity-based meanings or shallow, instrumental meanings—to the phenomenological place meaning methodologies and analysis techniques such as Williams' (2014) Layers of Place Meaning framework.

Reconnecting meaning and attachment. The goal of this chapter is to advance the study of sense of place, not just further distinguish the domains of phenomenological place meaning and psychometric place attachment. Therefore, I will use the findings of this study to reconnect meaning and attachment into a methodology with coherent philosophical commitments. If place attachments are based on place meanings, and places contain multiple meanings, then places also have multiple attachments that ought to be measured. These multiple meanings are most suitably understood through a phenomenological perspective. The intensity of affect toward those individual meanings are then best measured through a psychometric place attachment instrument (Figure 4).

Figure 4

Sense of Place Research Program



Based on these conclusions, what would a reconfigured holistic sense of place research program look like? In phase I, the research team phenomenologically gathers a population's place meanings through in-depth interviews and participant observation. This array of meanings would be coded according to the Layers of Place Meaning Framework, with final codes undergoing member checks. In phase II, the research team identifies the most frequent place meanings or meaning categories from each of the four layers. The number of meanings within each category could be flexible based on the results of phase I. The team then measures the intensity of attachment to these place

meanings in a survey distributed to a random or stratified random sample of the population frame.

Survey participants would be asked to provide their response on a 5-point Likert scale to questions that address inherent (*a*), instrumental (*b*), sociocultural (*c*), and identity-expressive (*d*) place meanings. Such an instrument would reveal participants' varied levels of attachment to individual place meanings that range in depth of meaning (Table 12; Full instrument in Appendix E).

Table 12

Sample of New Place Attachment Likert Scale Survey Items

	Each of these statements refers to the *McDowell Sonoran Preserve*.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a.	I am attached to the Preserve's physical beauty.	1	2	3	4	5
b.	I am attached to the Preserve as a recreational destination.	1	2	3	4	5
c.	I am attached to the Preserve as a symbol of Scottsdale.	1	2	3	4	5
d.	I am attached to the Preserve because of my identity as a steward with the Conservancy.	1	2	3	4	5

Addressing paradigmatic commitments. This new sense of place research program further narrows the scope of place attachment as a construct. However, it should satisfy scholars who traditionally prefer the psychometric approach because it allows for place relationships to be measured in a simple and generalizable manner through psychometric instruments. Phenomenologists should be satisfied with this approach

because it emphasizes the primacy of meaning and requires rich, on-the-ground exploration of place meanings and relationships prior to psychometrically measuring the intensity of attachment to those meanings.

Any new approach requires an explicit commitment to a set of philosophical values. Overall, this approach ascribes to a phenomenological perspective on place. The lived experience and our mechanism for understanding it must confront an inseparable person-world. The key difference is that once place meanings are understood in this context, the attachments to these meanings—and not the places—may be psychometrically measured, analyzed, and compared.

The reason that previous phenomenological and psychometric approaches were considered incompatible was because they fundamentally differed in their beliefs of how the human-environment relationship is experienced and measured. Phenomenologists reject the notion that a psychometric instrument like the PAI could access the inseparable human-environment relationship and directly measure that experience. This approach respects the inseparability of human and environment by only measuring participants' affects toward their socially constructed abstractions from that experience (meanings), and not the human-environment experience itself. This small shift in perspective and practice has considerable consequences in the study of place relationships because it should allow for place meanings and place attachments to be studied from their most appropriate perspectives under a single, philosophically-consistent research design.

CONCLUSION

This study is an attempt to address the recent stagnation in the place literature by pushing beyond the guidelines of critical pluralism. This phase of study combined data

from previously incompatible research paradigms using mixed methods initiation. The research team transformed participants' phenomenological place meaning narratives into two groups—those with and without a Predicted High Place Identity. Independent sample *t*-tests and Chi-Square tests for independence showed no significant difference in place identity scores between these two groups.

Operating from the assumption that place meanings are the foundations on which attachments are formed, this data suggests a need to improve the construct validity of place attachment and place identity. The discussion concluded with a proposed sense of place research program whereby psychometric place attachment is measured not to places, but to the variety of place meanings identified through a phenomenological narrative approach.

Limitations. While the hypothesis was not supported by the data, it is possible that the lack of statistical significance could be due to the relatively high place identity scores across the study population. The Predicted High Place Identity (PHPI) group did indeed have a higher place identity score than those who did not have a PHPI. This suggests that more testing could be done on different population groups, such as users of the conservation entity, who represent a larger sample size and are more likely to have a higher variability in their sense of identity than volunteers in a conservation entity.

The focus of the discussion has been on transformational changes to the place attachment methods and constructs. However, the Layers of Place Meaning Framework (Williams, 2014) also requires additional development. For instance, the tool was fairly adept at differentiating between identity-based and non-identity-based meanings but was imprecise in parsing the difference between sociocultural and identity-expressive place

meanings. Further, as mentioned in the discussion, this analysis tool is strengthened considerably by emphasizing the array of meanings from individuals and not just the most prominent.

Future research. This study raises questions about foundational elements of place research. The findings call for a reconceptualization of place attachment as well as a new sense of place research program that unites previously incompatible research paradigms. The next steps would be to implement this new research program and conduct member checks along the way to ensure an improved validity.

This proposed new methodological and philosophical structure is not the only possible conclusion based on the findings of this research. However, this research presents important findings about the nature of place meaning, place attachment, their relationship, and the methodological choices in exploring that relationship. Future place scholars working in this space should confront the issues raised in these findings.

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CHAPTER 5

CONCLUSION

The results of this study contribute to our understanding of the empirical relationship between volunteering and sense of place, how communities and volunteer organizations can practically foster sense of place, and how we may best theoretically and methodologically approach sense of place as a holistic construct. In this conclusion I will first provide an overview of these empirical, applied, and theoretical/methodological outcomes. Next, I will discuss this study's limitations and look ahead to ways that scholars may move this research forward. Finally, I will consider the contributions of this study at the broadest level.

STUDY OUTCOMES

Empirical outcomes. This study contributes multiple findings on the dynamics of sense of place for a conservation volunteer. Regarding sense of place in the conservation entity (the McDowell Sonoran Preserve), surveys of new stewards demonstrated that place attachment rises in the first year of service. Interviews suggested that deep place meanings develop in the process of New Steward Orientation and the early embodied experience of participating as a steward. The most salient place meaning in the Preserve was a place's ability to enact a steward identity. The importance of attaining and embodying a steward identity was bolstered by the quantitative high place identity scores for both new and established stewards. These phenomenological place meaning and psychometric place attachment results complemented one another, pointing to place identity as a common construct that could be used to experimentally test the relationship between meaning and attachment.

Volunteering with the Conservancy had little effect on attachments and meanings at the broader community level (the Phoenix metropolitan area, also known as Valley). Although Scottsdale and the Preserve are physically part of the Valley, interviews revealed that participants viewed them as separate. While this succeeds in highlighting the limited role that volunteering has on relationships with broader place scales, it is primarily an error in selecting the place scale to represent the community.

Attachment to the City of Scottsdale was not measured using the Place Attachment Inventory instrument, but alternative survey questions and results from interviews suggest that volunteering increases place attachment to the City of Scottsdale and transforms place meanings within Scottsdale. There was no better summation of this than the individual who asserted that prior to volunteering, Scottsdale meant nothing more to them than "an egotistical hub of snobs". Becoming a volunteer steward gave this individual "a feeling that the community really does care about something other than glitz, glamor, [and] money."

The qualitative place meaning results found that embodying the steward identity contributed to the development of deeper, identity-based place meanings. Based on these findings, this study hypothesized that Preserve place attachment would be correlated with volunteering intensity—measured through average hours/month of volunteer hours. Statistical analysis found no correlation between these variables. In fact, the analysis found no statistical difference in Preserve place attachment between active and inactive stewards. This suggests a more nuanced take on the embodied aspect of practicing place identity. The process of becoming a steward and identifying as such has more effect on

sense of place than the practice of volunteering. The applied outcomes are heavily influenced by this final point.

Applied outcomes. The most important applied lesson in this study is that low-level participation (and mere membership) in the Conservancy is all that is required to foster a deep sense of place in the Preserve and City of Scottsdale. The City of Scottsdale's investment in this Conservancy appears to be worthwhile. I have heard volunteers and residents alike refer to it as "the crown jewel of Scottsdale", and its force as a marketing tool and image shaper is tremendous. It is the central element in the city's tourism campaign, "Experience Scottsdale". Other municipalities could use this case to understand the social and cultural return on investment of preserving land and inviting residents to become environmental stewards of that land.

Volunteer organizations should also be encouraged by the results of this study. The Conservancy's New Steward Orientation is an excellent example of creating a low barrier of entry into the organization. Once in the organization, the Conservancy's patrol program encourages continued, casual engagement. Several stewards noted that they used the Preserve the same way before and after becoming a steward. The difference was that after becoming a steward, they felt an increased sense of identity and ownership. If fostering a sense of place is the goal, then this case demonstrates how complex engagement is not required. Sense of place can be fostered by bringing members of the community into the fold, providing them an appealing identity, and allowing them an easy way to serve.

For the McDowell Sonoran Conservancy leadership, these results are decidedly mixed. On one hand, Conservancy leaders should be encouraged by their success in

fostering sense of place and building an enviable organization. On the other hand, they are likely discouraged by having a structure where stewards are satisfied with low levels of participation.

Survey participants were asked several questions about their attitudes toward volunteer organizational leadership participation. This was part of the Conservancy's effort to understand why stewards were disinclined to take on more responsibility. The survey revealed two reasons for the low interest in leadership positions. First, many retirees were looking for something unlike their previous work life, which was structured and stressful. Second, they felt fulfilled with sporadic, casual participation. Conservancy leadership was briefed on these findings and these insights factored into their strategy to further develop their leadership pipeline. Nevertheless, this situation is not uncommon among volunteer organizations, and ultimately stems from the positive effects of limited participation in the volunteer program.

Although this study argues for the importance of fostering sense of place, the mission of the organization is to preserve the land. That mission is best served by encouraging more and deeper forms of steward engagement. As the Conservancy continues to update their volunteer expectations and program structure, my recommendation is to also acknowledge that having a large group of casual participants has benefits for the community. Their mere association with the organization has helped to foster a stronger sense of place to the Preserve and City of Scottsdale.

Theoretical/methodological outcomes. The critical pluralist turn in place scholarship succeeded in allowing a diversity of place paradigms and research programs. This study demonstrates that moving the place literature forward theoretically and

methodologically requires breaking with this critical pluralism and attempting an experimental mixed methods initiation approach. In this experimental methodology I reanalyzed my phenomenological place meaning narratives into quantitative data so that I could combine it with psychometric place attachment survey scores. The design tested the simple hypothesis that volunteers who expressed identity-based place meanings would be more likely to score higher on a self-rated place identity survey. The results indicated no statistically significant difference in place identity scores between those with and without identity-based place meanings. The mixed methods initiation approach succeeded in its mission to reveal contradiction in the status quo of place theory and reveal new ways of thinking (Rossman & Wilson, 1985).

These findings suggest a need to address the validity of the place attachment construct. The place attachment construct takes many forms across the literature, but most consider it to be a multidimensional construct that includes subconstructs such as place identity, or as a superordinate construct that approximates the entirety of the human-environment relationship. The data from this study supports Williams' (2014) assertion that place attachment should be defined narrowly. This study goes further to conclude that place attachment should be theoretically repositioned as a construct such that it no longer measures affect toward a location but, rather, affect toward a location's meanings. This theoretical shift alleviates the philosophical incompatibility between phenomenological place meaning narratives and psychometric place attachment survey instruments.

The study recommends that place meaning and place attachment be studied together as part of a larger holistic construct, sense of place. This sense of place research

program would first phenomenologically explore place meanings, then psychometrically measure place attachments to those meanings or categories of meanings. This design would reveal depth of meaning while also cataloguing the simple, measured intensity of attachment to that meaning. Meanings are inherently particular to populations and places. However, because the meanings would vary in depth across Williams' Layers of Place Meaning framework (2014), this data may be generalized according to a populations' levels of attachment to inherent, instrumental, sociocultural, and identity-expressive meanings.

This study produced two other notable theoretical contributions to the place literature. First, the photovoice project (Chapter 2) revealed not only this population's particular place meanings, but the way that places and meanings exist across space and time. The analysis revealed one participant's place meaning ascribed to his cell phone background screen, demonstrating the dislocated spatial nature of place. Another participant demonstrated the temporal variability of place meaning when he discussed how baseball stadiums are meaningful to him—but only during certain phases of life in boyhood, fatherhood, and grand-fatherhood. These outcomes further support the power that photo-based methodologies have in exploring deep place relationships.

Second, the analysis phase of the psychometric place attachment data revealed the effectiveness of the mixed methods complementary approach (Chapter 3). Although the place meaning and place attachment data did not match at the individual level, each study's results produced broadly similar conclusions. The qualitative place meaning data was very informative in the analysis of the place attachment data. For those who might continue to use the Place Attachment Inventory or similar instrument, this study

demonstrates how qualitative place meaning data may improve analysis, even if the data was collected from theoretically incompatible research paradigms.

LIMITATIONS AND NEW DIRECTIONS

The results of this study are limited by several factors, including: a lack of comparative perspective, questions about the representational validity of methodologies, errors in the choice of place scale, and varying interpretations of the experimental methodological approach.

This study would have been improved by including a comparative perspective, a feature common to anthropological study. For example, selecting a comparative conservation group that did not have a program like patrol would have strengthened the analysis that it was the patrol program that contributed to the Conservations' success in easily fostering sense of place. Additional perspective from members of the neighboring Salt River Pima-Maricopa Indian Community and Fort McDowell Yavapai Nation would have provided an interesting comparative perspective on place relationships with these mountains across time.

Early in the study I planned to include a similar volunteer organization in the Phoenix metropolitan area—the White Tank Mountain Conservancy—as a comparative case. I was limited by time and chose to focus on solidifying the study's theoretical and applied contributions at the expense of the empirical contribution. While phenomenological place scholars might argue that sense of place is too idiosyncratic to benefit from a comparative perspective, I believe this would be a worthwhile avenue to explore in future studies.

A comparative perspective would have been particularly valuable because the high socioeconomic status of the area calls into question the ability to apply these results to low socioeconomic status areas, which may arguably have a larger need to foster sense of place. With regards to this critique, it is fair to say not all municipalities will be able to purchase land preserves for their residents and be able to draw a large body of individuals with the time and ability to volunteer in all the ways that Conservancy stewards volunteer. However, the key applied lesson from this case study is that fostering sense of place does not take intense training or high commitment. The most important factor is getting residents to buy into an identity as a caretaker of their community, regardless of status or scale.

The results of this study would have been strengthened by also measuring non-volunteer McDowell Sonoran Preserve users' senses of place in the Preserve, Scottsdale, and Valley across time. Without this data as a point of comparison, it is uncertain whether gains in place attachment to the Preserve and City of Scottsdale were due to volunteering or to simply being a resident of Scottsdale during this year-long period and continuing to hike in the Preserve as a user. While this data would have been instructive as a control group, the results of this study suggest that it is not hours of engagement or types of engagement that increase place attachment, but rather, the transformational act of adopting a steward identity.

A major takeaway from phase III of this study is that the methodologies used in sense of place research need work. Therefore, phase I and phase II, which employed these methodologies, are apt for critique. At the beginning of data analysis, no scholars had previously used the Layers of Place Meaning framework in an empirical study. As

discussed in Chapter 4, the implementation of this framework must emphasize an individual participants' multiple place meanings.

The shortcomings of the Place Attachment Inventory—and the theoretical foundation on which it is based—were heavily critiqued in this study. Nevertheless, one of the larger mistakes in this study came from my error in selecting the Phoenix Metropolitan Valley as the representation of the community scale instead of the City of Scottsdale. The ability to use open-ended interview questions as well as a posttest survey where I could include this place scale was important in revealing the role that volunteering has on Scottsdale sense of place. However, this study would have been much improved by ensuring the proper place scales from the beginning.

Finally, while I took care in Chapter 4 to address each potential interpretation of my results and address why my interpretation was most reasonable, there remain other ways to interpret the fact that those with a High Predicted Place Identity did not possess a high place identity. I recognize that within the tradition of modern sense of place research, my recommendations are one of many unifying solutions. At the very least, my hope is that the results of this experiment call attention to the need to further explore the relationship between the two elements of sense of place—place meaning and place attachment.

Going forward, this study could inspire new directions at the individual and broader level. Individually, I could build on these results by adding a comparative perspective, discussed above, to strengthen this study's empirical and applied findings. I could also test the proposed research model on a new group of incoming McDowell Sonoran Conservancy stewards or other group of volunteers. Any new research on this

population would focus on understanding sense of place at the City of Scottsdale level. It would be particularly interesting to understand the changing relationships with Scottsdale for those stewards who live in other municipalities, such as the City of Phoenix.

At the broader level, I encourage scholars to test this new methodology or conduct experimental methodologies on their own mixed methods data sets. For those who continue to employ the traditional Place Attachment Inventory or similar methodologies, I hope this work inspires them to consider means of ensuring representational validity.

BROADER PERSPECTIVES

This study was born out of the discord that permeates the study of the human-environment relationship. If sense of place includes place meanings and place attachments, and meanings are the foundation on which attachments are based, why are these constructs not studied together in a way that empirically connects them? The results of this study demonstrate that they can be studied together by changing the way we theoretically approach the role and function of place attachment.

In approaching place attachment as a construct that measures affect toward a place's multiple meanings, a single study may qualitatively explore particularistic and deep place meanings and then quantitatively measure attachments to those meanings in a way that can be generalizable across populations. This study addresses the issue of combining philosophically incompatible research paradigms in the place literature and provides a way to more accurately understand the human-environment relationship.

In an age of increasing placelessness, opportunities to connect to our physical local community may be fewer, but these connections are nevertheless critical to our social wellbeing. Empirical and applied outcomes of this study demonstrate how

communities may foster these connections. The story of the McDowell Sonoran Preserve is a tale of a community coming together to protect what they love about their land and building an organization that will sustain that commitment through volunteer stewardship. The lesson for communities and the organizations that support them is that this commitment is worth the investment, and you can build a community of land stewards by inviting them to take part in a way that costs little in time but returns much in terms of a strong sense of place and identity.

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APPENDIX A

APPROVAL DOCUMENTS

McDowell Sonoran
CONSERVANCY

Dear Members of the Internal Review Board,

The McDowell Sonoran Conservancy is pleased for Ryan Bleam, PhD candidate in the School of Human Evolution and Social Change, to study the McDowell Sonoran Conservancy (MSC) Steward Program as part of his PhD work entitled "Volunteer Preserve Stewards and the Experience of Place". Our volunteer (Steward) leadership committee and MSC staff have reviewed and approved Mr. Bleam's study proposal.

Mr. Bleam is interested in exploring the experience of volunteering and the role that it plays in the formation and development of 'sense of place'. Specifically, how does the process of volunteering affect one's connection to community and how one interacts with and defines that community? Mr. Bleam has already conducted a pilot study within the MSC steward community consisting of a series of focus groups, and plans to build upon that pilot study with in-depth interviews, participant observation, and a method called photo-voice.

The photo-voice portion of the study will be conducted between November 2015 and October 2016, and will be followed by interviews between October 2016 and May 2017. Mr. Bleam will also be performing a content analysis of MSC training between January 2017 and May 2017. In addition, he will be conducting a focused survey between October 2016 and December 2017.

The McDowell Sonoran Conservancy's Field Institute grants permission for Mr. Bleam to conduct and recruit participants from the MSC Steward population for the above activities through purposive sampling. This may involve identifying initial Steward contacts and gaining referrals, or identifying participants through staff-directed profile searches in the MSC Steward database.

This study will benefit the MSC by providing us with information about our Steward program that may help us improve our recruiting and retention efforts, and also provide us with a case study for our work in helping other environmental conservation organizations develop Steward programs.

16435 North Scottsdale Road Suite 110 Scottsdale, Arizona 85254 (480) 998-7971 Fax (480) 656-4670

People Preserving Nature

Please send a stamped, IRB approved copy of the consent document for our records.
Feel free to contact me if you require any further information.

Sincerely,

Helen Rowe

Helen Rowe, Ph.D.
McDowell Sonoran Field Institute Director
McDowell Sonoran Conservancy
16435 N. Scottsdale Road Suite 110
Scottsdale, Arizona 85254
Helen@mcdowellsonoran.org
480-696-2325

APPROVAL: MODIFICATION

Shauna BurnSilver
Human Evolution and Social Change, School of (SHESC)
480/965-5592
Shauna.Burnsilver@asu.edu

Dear Shauna BurnSilver:

On 12/15/2015 the ASU IRB reviewed the following protocol:

Type of Review:	Modification
Title:	Volunteer trail stewards & the experience of place
Investigator:	Shauna BurnSilver
IRB ID:	STUDY00002256
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• MSC_DemographicsSheet.pdf, Category: Screening forms; • ModifiedMSC_ApprovalLetter.pdf, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • Bleam_ModifiedProtocol12.15.docx, Category: IRB Protocol; • Bleam_ConsentForm (revised)_SBB.pdf, Category: Consent Form; • Bleam_References.pdf, Category: Resource list; • Bleam_PhotoVoiceConsent.pdf, Category: Consent Form; • Bleam_ProposedBudget.pdf, Category: Grant application; • Bleam_PhotovoicePhotoReleaseForm.pdf, Category: Consent Form;

The IRB approved the modification.

When consent is appropriate, you must use final, watermarked versions available under the "Documents" tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Ryan Bleam
Ryan Bleam

APPENDIX B

CONSERVANCY DOCUMENTS

McDowell Sonoran Preserve and Conservancy Timeline

Year	Milestone
1990	A group of Scottsdale residents forms the McDowell Sonoran Land Trust
1993	Scottsdale City Council establishes a McDowell Mountain Task Force to identify goals for Preserve. A survey found that residents viewed McDowell Mountains as key to Scottsdale's identity.
1994	City of Scottsdale dedicates 4.5 mi^2 as the McDowell Sonoran Preserve
1995	Scottsdale voters overwhelmingly approve .2% sales tax increase to fund Preserve (64%)
1996, 1998, 2004	Scottsdale voters approve of additional bond initiatives and sales tax increases to fund Preserve land acquisitions
1998	McDowell Sonoran Land Trust partners with Scottsdale Community College's Center for Native and Urban Wildlife to begin what is now the McDowell Sonoran Conservancy
2009	LEED Platinum certified Gateway Trailhead opens
2010	Conservancy launches McDowell Sonoran Field Institute
2012	City of Scottsdale adds over 10,000 acres to Preserve
2015	McDowell Sonoran Conservancy stewards contributed over 58,000 hours, valued at over $1.3M to the City of Scottsdale

Fudala, 2014

Overview of McDowell Sonoran Conservancy Volunteer Programs

Program	Description	Hrs in FY2015	% of Total
Patrol	Regular patrol of trails, report trail conditions	18,902	32.05
Citizen Science	Study of flora, fauna and geology of Preserve	10,227	17.34
Steward Education	New Orientation and continuing education	6,082	10.31
Other Organizational	Leadership positions, assisting office staff	5,728	9.71
Pathfinders	Hosts at the trailheads	4,187	7.10
Tour	Public hikes, private hikes, hike/bike tours	3,464	5.87
Construction & Maintenance	Maintenance of trails	2,968	5.03
Community Relations	Outreach, speakers bureau, publications, photography	2,914	4.94
Volunteer Support	Steward retreats and social events	2,195	3.72
Nature Guides	Education programs, nature tours, trailside nature stations	1,521	2.58
Fundraising & Donor Relations	Support Conservancy fundraising activities	784	1.33
Total		58,971	100%

APPENDIX C

FOCUS GROUP DOCUMENTS

Focus Group Guiding Questions, Spring 2015

1. Background Information:

- Where do you come from and what brought you here to Arizona?
- How and why did you become a steward?
- What are/have been your roles?

2. Places in the Preserve

- How were you acquainted with the preserve before you became a steward?
- Has your use of the preserve changed since then? Why?

2. Places in the Preserve

- What are some particular places inside the preserve you find meaningful or special? Why?

3. Places outside the Preserve

- What are some particular places in the Valley (but outside the Preserve) you find meaningful or special? Why?
- What about places not in the Valley? Why?

3. Places outside the Preserve

- What does the word *home* mean to you?
- Where is home for you?

3. Places outside the Preserve

- If you are a non-native, what is your relationship with the outdoors in your native place?
- Is it similar or different to your relationship with the outdoors here?

4. Intra-Organizational Relationships

- How would you characterize the relationship among volunteers?
- Professional? Social? What decides the level of interaction?

4. Intra-Organizational Relationships

- How does the volunteer experience differ according to the following variables:
  •Hours served
  •Age of steward
  •Occupational/family status
  •Length of residence in AZ
  •Leadership
  •Job roles
  •NSO class (early years vs. more recent)
  •Lead/Master status

4. Intra-Organizational Relationships

- How would you characterize the relationship between stewards and Conservancy staff?
- Professional? Social? What decides the level of interaction?

4. Intra-Organizational Relationships

- Have you ever held a leadership position in the organization?
- Whether you have or not, what is your impression of the experience?

4. Intra-Organizational Relationships

- What does it mean to be a steward at the Conservancy compared to other organizations?
- What does it say about you, either personally or socially?

5. Final Thoughts

- What other questions should I be looking in to?
- Are there aspects that I've missed about the steward experience?

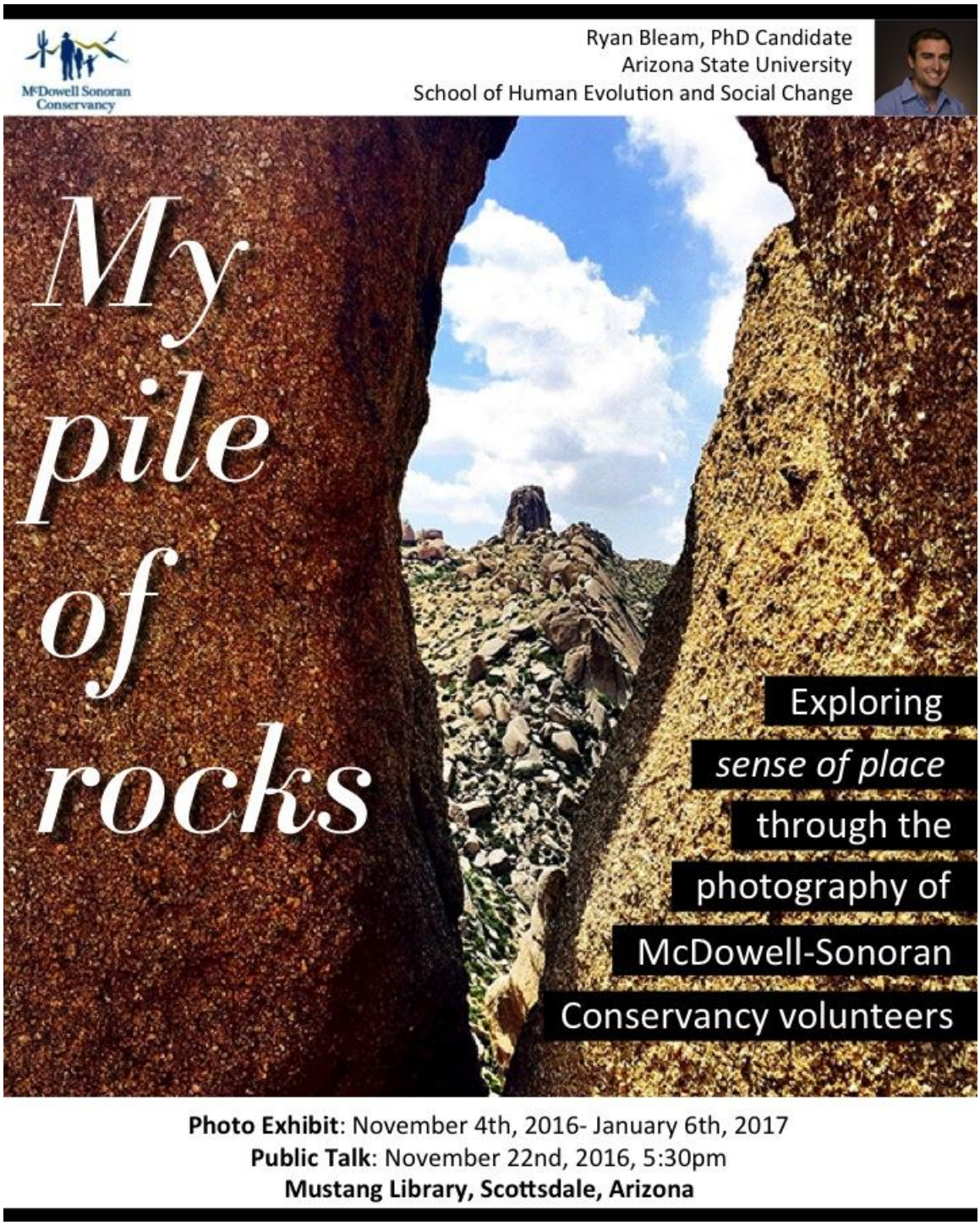
APPENDIX D

PHOTOVOICE DOCUMENTS

Salience of Photovoice Place Meanings

Variable	Valley (N)	Valley (%)	Preserve (N)	Preserve (%)	Total (N)	Total (%)
Volunteer Identity	3	3.3%	23	25.6%	26	**14.4%**
Beauty	11	12.2%	13	14.4%	24	**13.3%**
Bonding/Socializing	15	16.7%	8	8.9%	23	**12.8%**
Symbolic	10	11.1%	11	12.2%	21	**11.7%**
Challenge	7	7.8%	9	10.0%	16	**8.9%**
Flora	7	7.8%	9	10.0%	16	**8.9%**
Memorable Exper. (+)	9	10.0%	5	5.6%	14	**7.8%**
Landmark	5	5.6%	7	7.8%	12	**6.7%**
Family Role/ Identity	8	8.9%	3	3.3%	11	**6.1%**
Hobby	7	7.8%	3	3.3%	10	**5.6%**
Origin Experience	2	2.2%	8	8.9%	10	**5.6%**
Human History	5	5.6%	4	4.4%	9	**5.0%**
Memorable Exper. (-)	5	5.6%	3	3.3%	8	**4.4%**
Cultural Appreciation	7	7.8%	0	0.0%	7	**3.9%**
Different/ Unusual	1	1.1%	6	6.7%	7	**3.9%**
Fauna	4	4.4%	3	3.3%	7	**3.9%**
Preservation	2	2.2%	5	5.6%	7	**3.9%**
Place Connection	5	5.6%	0	0.0%	5	**2.8%**
Proximity	2	2.2%	3	3.3%	5	**2.8%**
Emotion of Place	3	3.3%	1	1.1%	4	**2.2%**
Learning	1	1.1%	3	3.3%	4	**2.2%**
Temporality	1	1.1%	3	3.3%	4	**2.2%**
Weather	2	2.2%	2	2.2%	4	**2.2%**
Exercise	2	2.2%	1	1.1%	3	**1.7%**
Work Role/ Identity	3	3.3%	0	0.0%	3	**1.7%**
Emotion of Person	1	1.1%	1	1.1%	2	**1.1%**
Exclusivity	1	1.1%	1	1.1%	2	**1.1%**

Exhibit and Speaker Series Poster, Winter 2016/2017



Photovoice Exhibit Theme: Emotion

Feet on the Trail
McDowell Sonoran Preserve, Scottsdale, AZ

“I feel like I am Paradise Trail. … It's the trail that my new house— the property line— connects to. If I leave my house and come up here and my feet are on this trail, I feel good. … Because I'm a steward I feel like I have a responsibility like it's a child.”

Photovoice Exhibit Theme: Emotion

Tom's Thumb Trail
McDowell Sonoran Preserve, Scottsdale, AZ

"It just feels like you're in a completely different location. There is just some sort of atmosphere there that you— a sensation that you have been placed somewhere different from any other place in the Preserve. It just has a really unique vibe to it and just a gorgeous place."

Photovoice Exhibit Theme: Identity

Volunteering with Conservancy Research Projects
McDowell Sonoran Preserve, Scottsdale, AZ

"You get to meet some of the people who really know so much about the plant life and the desert, the experts in their field. It's educational for me … and you feel like you doing something worthwhile."

Photovoice Exhibit Theme: Identity

Hiking with Grandson
McDowell Sonoran Preserve, Scottsdale, AZ

“These days it is getting the kids away from the electronic nannies. I want him to get to enjoy the outside world. I grew up in New York City. The outside world was a main street, not what we have here. … This is a chance for me to do something with him that I didn’t really have the chance to at his age.”

Photovoice Exhibit Theme: Identity

Working at The Mayo Clinic
Scottsdale, AZ

“I totally buy into the mission, and believe that we are what we say we are in terms of our practice, education, research goals and priorities. And I've been able to bring aspects of being a steward into elements of my career here at Mayo.”

Photovoice Exhibit Theme: Identity

James Turrell's Skyspace
Tempe, AZ

"I'm a Quaker. And [artist] James Turrell is also a Quaker. [The installation] is about perception … and light, which is central to Quaker beliefs. … It's just lovely to go around twilight and sit until the sky gets completely black."

Photovoice Exhibit Theme: Experiences

A Message at Sears Kay Ruin
Cave Creek, AZ

“As we were walking uphill all of a sudden I’m having trouble breathing, and it started with pain in my chest. So I just struggled to make it to the top. Of course, going back down I felt better but then I thought I needed to go get it checked out. And so that's what I did. And that led to the open-heart surgery and saving my life. So, when I think of Sears Kay I think of my life. It was kind of a message to me.”

Photovoice Exhibit Theme: Experiences

Phoenix Zoo Bridge
Phoenix, AZ

“My daughter’s name is on a brick at the Phoenix Zoo. We’ve gone quite a bit over the years. … Every time I go down there I enjoy looking for her brick and thinking about her as a little girl looking over the turtles and that mucky, ugly water.”

Photovoice Exhibit Theme: Experiences

“Snake Rock”
McDowell Sonoran Preserve, Scottsdale, AZ

“There was a whole gnarl of rattlesnakes up on that [rock] … and they started doing the snake mating dance. And we were so enthralled. … I’m an old biology teacher and that was just far beyond anything I ever expected … to see something so rare in nature.”

Photovoice Exhibit Theme: Features

Dixie Mine Petroglyphs
McDowell Mountain Regional Park, AZ

“You see these types of things and try to imagine the people who were there before you. It takes you away from our modern times and to another place. … It just reminds you why you are out here and what you’re protecting.”

Photovoice Exhibit Theme: Features

Desert Botanical Garden
Phoenix, AZ

“I just really love plants. It's a comfortable place to go and just walk around. I also want to do a butterfly garden and they had people there that had all kinds of advice. So, you get to look at cool stuff and get to learn things, too.”

Photovoice Exhibit Theme: Features

The “Michelin Man” Saguaro
McDowell Sonoran Preserve, Scottsdale, AZ\

“I love saguaros and that was a part of the attraction for me coming to Arizona last year. And my [Conservancy] mentor took me there to show me this very unique saguaro—they call it the Michelin Man. … That just reinforced my love for the McDowells, and for people mentoring and volunteering.”

Photovoice Exhibit Theme: Symbol

51_7: Flowering Ocotillo

Flowering Ocotillo
McDowell Sonoran Preserve, Scottsdale, AZ

“The flowering ocotillo is symbolic of my love for the Sonoran Desert, and symbolic of the beautiful and dramatic resilience of desert life. Here we are at the end of what’s supposed to be a dry season and it has the gumption to sprout flowers!”

Photovoice Exhibit Theme: Symbol

Bartlett Lake
Tonto National Forest, AZ

“Bartlett Lake represents the foresight of farmers and the government to plan for increased water usage in the future through reservoirs. …We like to think we’re just individuals, but we stand on the shoulders of those who came before us.”

Photovoice Exhibit Theme: Symbol

Backyard Dream Come True
Scottsdale, AZ

“This is the nicest house that we've ever had and it’s a third of an acre, with a nice backyard and pool. … It’s a kind of payback for good planning. And a ‘dream come true’ kind of thing. ... It’s just very peaceful. I walk out there and I can't believe that this is ours.”

Photovoice Exhibit Theme: Symbol

Thompson Peak as Landmark
McDowell Sonoran Preserve, Scottsdale, AZ

“Thompson Peak is the epicenter for so many different things. It’s such a focal point. I remember when we first bought our house and I would be coming home from work and I would look up and think, ‘I get to look at that every day’. I just felt incredibly happy about that and I still do.”

Photovoice Exhibit Theme: Time

Flowers on Granite Mountain Loop
McDowell Sonoran Preserve, Scottsdale, AZ

“Brittlebush is probably one of the most prolific spring flowers I think in the whole desert. It really represents spring in the desert to me.”

Photovoice Exhibit Theme: Symbol

Sunrise Riding
McDowell Sonoran Preserve, Scottsdale, AZ

“Maybe it’s not so much the place, but it’s the time of day … I just feel more alert and more in tune with what’s around me at that hour of the morning. … It’s extremely peaceful, and you see lot of wildlife because of the hour and because there’s nobody else around.”

APPENDIX E

SURVEY DOCUMENTS

Place Attachment Inventory (Williams & Vaske, 2003)

Code	Each of these statements refers to the [*McDowell Sonoran Preserve]* / *[Phoenix Metropolitan Valley]*	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Id*	I feel that this place is a part of me.	1	2	3	4	5
Dep**	This place is the best place for what I like to do.	1	2	3	4	5
Id	This place is very special to me.	1	2	3	4	5

Code	Each of these statements refers to the [*McDowell Sonoran Preserve]* / *[Phoenix Metropolitan Valley]*	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Dep	No other place can compare to this place.	1	2	3	4	5
Id	I identify strongly with this place.	1	2	3	4	5
Dep	I get more satisfaction out of being at this place than at any other.	1	2	3	4	5

Code	Each of these statements refers to the [*McDowell Sonoran Preserve]* / *[Phoenix Metropolitan Valley]*	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Id	I am very attached to this place.	1	2	3	4	5
Dep	Doing what I do at this place is more important to me than doing it in any other place.	1	2	3	4	5
Id	Being at this place says a lot about who I am.	1	2	3	4	5

Code	Each of these statements refers to the [*McDowell Sonoran Preserve]* / *[Phoenix Metropolitan Valley]*	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Dep	I wouldn't substitute any other area for doing the types of things I do at this place.	1	2	3	4	5
Id	This place means a lot to me.	1	2	3	4	5
Dep	The things I do at this place I would enjoy doing just as much as a similar site. *	1	2	3	4	5

Adapted from Williams & Vaske, 2003
*Contributes to place identity score
**Contributes to place dependence score

Sense of Place Research Program Attachment Survey

	Each of these statements refers to the *McDowell Sonoran Preserve*.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
INHERENT	I am attached to the Preserve's physical beauty.	1	2	3	4	5
	I am attached to the Preserve because of its physical proximity to my home.	1	2	3	4	5
	I am attached to the Preserve because of the flora/fauna in the Preserve.	1	2	3	4	5
	Each of these statements refers to the *McDowell Sonoran Preserve*.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
INSTRUMENTAL	I am attached to the Preserve as a recreational destination.	1	2	3	4	5
	I am attached to the Preserve's ability to teach me about the desert.	1	2	3	4	5
	I am attached to the Preserve because it allows me to socialize.	1	2	3	4	5

	Each of these statements refers to the *McDowell Sonoran Preserve*.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
SOCIOCULTURAL	I am attached to the Preserve as a symbol of Scottsdale.	1	2	3	4	5
	I am attached to the Preserve as a symbol of preservation.	1	2	3	4	5
	I am attached to the Preserve because of the landmarks in the Preserve.	1	2	3	4	5
	Each of these statements refers to the *McDowell Sonoran Preserve*.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
IDENTITY-EXPRESSIVE	I am attached to the Preserve because of my identity as a steward with the Conservancy.	1	2	3	4	5
	I am attached to the Preserve because of personal memories that happened there.	1	2	3	4	5
	I am attached to the Preserve because it helps me fulfill my role as a parent/grandparent.	1	2	3	4	5

Adapted from Williams & Vaske, 2003